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The Clustering of Organizational Innovation: Developing Governance Models for Vertical Integration

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Abstract

This case explores a cluster of firms that emerged sharing a particular ownership structure. Typically, clusters are thought of as interrelated firms that produce similar products and services. However, we document the emergence and evolution of a cluster of entrepreneurial ventures that developed using a unique governance structure. We explore the deviant case of Renville, MN because of its notable success in developing a series of entrepreneurial ventures that provided producers with the opportunity to vertically integrate.

Keywords: collective entrepreneurship, organizational innovation, joint vertical innovation, cluster

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Introduction

As farmers began expanding production and buying-up land throughout the 1970s, Renville area farmers realized horizontal expansion of their farming operation through the acquisition of additional acreage would not allow their community to prosper. Expanding farm size meant a dwindling number of farm families, making it difficult to maintain adequate infrastructure. For many communities across the Midwest, agricultural prosperity led to the demise of Main Street. But one rural community sought a revival.

While some rural communities attempt to lure factories and industry to locate in their area, this strategy failed to work for Renville. Undaunted, Renville area farmers began to develop a unique model of producer ownership. Producers have consistently chosen to pursue this collective entrepreneurial strategy rooted in joint vertical integration and organizational innovation. Farmers began to develop their joint vertical integration strategy by chance when a local processor shut down. Over the next 25 years, these local producers developed business experience, professional contacts, and a well-seasoned network of fellow investors to support investments in processing and marketing facilities.

To minimize high levels of investment and risk inherent in their ventures, these entrepreneurs developed an innovative organizational form: the New Generation Cooperative (NGC). This organizational form attracted many investors through the creation of investment incentives inaccessible to traditional forms of producer group action. After two well-publicized, profitable NGC ventures, farmers decided to pursue a similar strategy for several of the crops in their rotation. They joined together to identify opportunities to add value to a variety of their crops—primarily sugarbeets, corn, and soybeans. What began by chance after the closing of a sugarbeet processing facility, evolved into an interconnected agglomeration of local agribusinesses with a similar governance structure.

Clustering of an Organizational Innovation

Clustering of economic activity is widely recognized as resulting in economies of agglomeration. The great Alfred Marshall, in his classic text on economics, transformed the economic way of thinking by suggesting the existence of economies external to the firm that may be captured as a result of co-location. Due to proximity, firms may capture benefits from their industrial environment. Whether positing that firms co-locate for consumer convenience, from the sharing of a pool of laborers with specialized skills, or by borrowing innovative ideas, economists have long recognized the benefits of clustering (Marshall, 1890; Porter, 1998; Fujita, Krugman and Venables, 2001).

Economists often focus on clusters as "geographic concentrations of interconnected companies and institutions in a particular field" (Porter, 1998). In doing so, interrelated firms that produce similar products and services capture their attention. Recently, however, there has been a growing interest in the economic benefits derived from the clustering of certain organizational forms (Thompson, 2003). What agglomeration economies are available to groups of firms sharing key organizational or managerial characteristics though producing a variety of products? How do organizational clusters develop?

A Cluster of New Generation Cooperatives in Renville

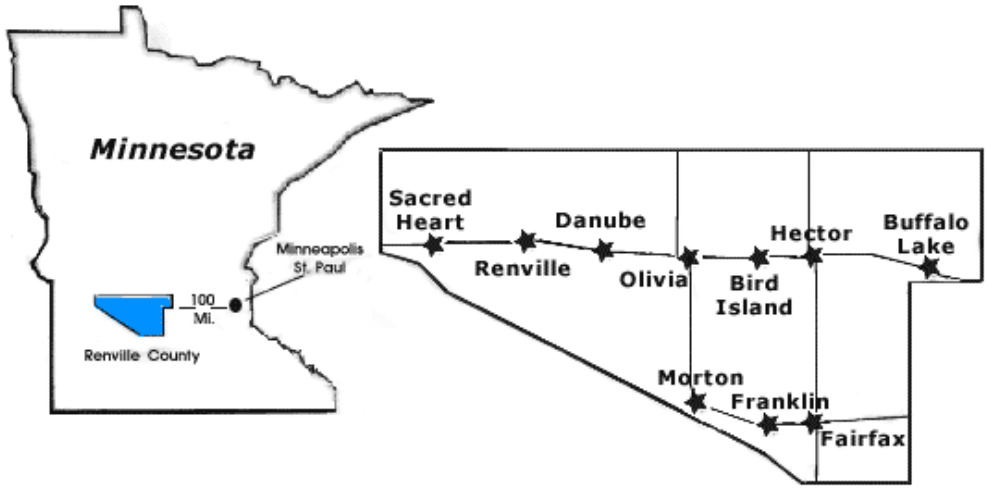
This case explores the adoption and diffusion of a unique organizational innovation that led to the development of a cluster of firms sharing a common governance structure, the NGC. It is a story of a rural community, a set of complementary agricultural resources, and an innovative and industrious people. These entrepreneurs leveraged their resources and social capital to form a "cluster" of NGCs, a process widely described as the "Renville Phenomenon." Unlike the typical industry cluster, this cluster is based not on a product, market segment, or technology, but on a particular set of organizational arrangements. Renville's unique model of producer ownership became so popular that the town of Renville began charging observers – coming from as far away as Brazil, Japan, Australia, and several European countries – $25 per person to observe Renville's business and community structure.

We begin by describing Renville County, Minnesota, presenting a snapshot of its success. To understand the roots and development of this phenomenon, we then trace this organizational innovation from its inception. We follow with a description of the unique aspects of the NGC governance model developed. Finally, we describe the proliferation of a series of interconnected NGCs developed in the Renville area and question what key elements led to the development of this organizational cluster.

Renville County, Minnesota

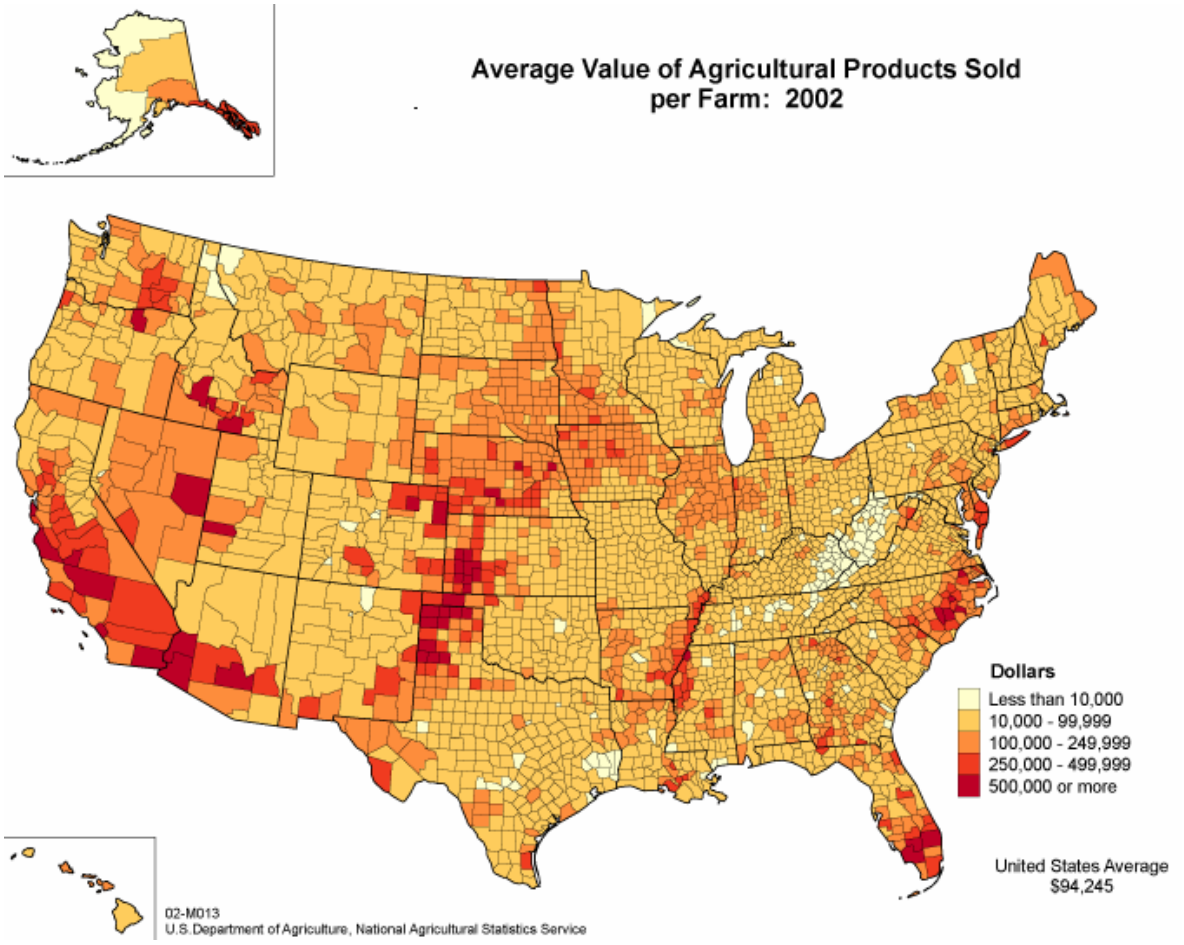
Located in Minnesota's western Corn Belt, Renville County is home to more than 1,500 family farms (Exhibit 1). Average farm size is 570 acres. The average market value of products sold per farm is over $270,000 (Exhibit 2). In 2002, Renville ranked number one in Minnesota in acres of corn for grain and soybeans with 247,053 and 245,244 acres, respectively. Renville County also ranked third in the state in acres of sugarbeets harvested with slightly more than 48,000 acres (National Agricultural Statistics Service, 2002).

Exhibit 1: Map of Renville



Source: http://www.co.renville.mn.us/index.asp?Type=B_BASIC&SEC={19D19153-9853-4F0E-AD69-F7179CDB1241}

Exhibit 2: Average Value of Agricultural Products Sold per Farm: 2002



The State of Minnesota leads the nation in acres of sugarbeets planted, with approximately 486,000 acres planted in 2004. Minnesota is also a top producer of corn and soybeans, ranking fourth in the nation in acres of corn and third in the nation in acres of soybeans planted. Average farm size in Minnesota is about 340 acres, compared to the U.S. average of 441 acres. The average value of agricultural products sold per farm is $106,083, above the U.S. average of $94,245 (National Agricultural Statistics Service, 2002).

Renville's land is productive. However, transportation costs often put area farmers at a commodity trading or marketing disadvantage. Barge terminals on the Mississippi River and processing mills in the Twin Cities are some 100 miles away. Rail service is relatively expensive and unreliable. Therefore, "farmers pay close attention when there is talk of increasing the value of their corn and reducing the costs of transportation" (Gerber, 1996). Nonetheless, Renville is widely recognized as a highly innovative community, one where producers experiment with the latest technologies and business arrangements. Starting in the early 1990s, Renville County became known for numerous progressive and innovative producer owned and controlled cooperatives. Seven of these were of the configuration called the NGC. The NGCs included Southern Minnesota Beet Sugar Cooperative (SMBSC), Minnesota Corn Processors (MCP), ValAdCo, Golden Oval Eggs (GOE), Churchill Cooperative, Phenix Biocomposites, and MinAqua Fisheries Cooperative. The City of Renville, home to four NGCs, bills itself as America's "Cooperative Capital."

With 841 cooperatives and 185 credit unions, Minnesota is one of the nation's leaders in terms of the number of organizations in the state using the cooperative form of governance. About half of these cooperatives are agricultural cooperatives. Studies indicate Minnesota is home to 311 cooperatives, generating $6.07 billion in revenues and 79,363 jobs. The economic impact of these cooperatives organizations is estimated at $10.89 billion (Folsom, 2003).

Minnesota also leads the nation in NGCs as the home of at least 42 organizations with this unique governance structure (North Dakota is second, with 33, and Iowa ranks third, with 31.) (Merrett, et al., 2003). Minnesota became a hotbed for NGC investment in the 1990s, but the roots of this collective entrepreneurial movement began decades before, with a collective investment in sugarbeets. We delve into the historic development of this organizational form to uncover the origin of what would become a cluster of organizational innovation.

Renville's First NGC: Southern Minnesota Beet Sugar Cooperative

Renville's first NGC was a sugarbeet processing facility built on the edge of town in 1974. The "new generation" governance structure was a little known concept. And, Minnesota was a relatively small player in the sugarbeet industry. So, how and why did this new generation sugarbeet cooperative emerge in the small town of Renville?

Part of the answer lies in the hands of a few farmers who had added a profitable, alternative crop to their rotation years before and in a series of investments that would leave farmers with equipment of little value if sugarbeets were to be pulled from their rotation. In the next few paragraphs, we explore the roots of Minnesotan producers' investment in sugarbeets, the specific nature of those investments, and the process by which producers chose the NGC model. Understanding these elements of Renville's history and the success of early NGC pioneers allows us to begin to describe the process by which a cluster of NGCs developed in midwest Minnesota.

In 1906, a sugar processing plant opened in Chaska, Minnesota, near Minneapolis (Exhibit 3). Growers who delivered to the plant were primarily from southern Minnesota (Minnesota Historical Society). However, in 1918, a farmer from northwestern Minnesota, in the Red River Valley, sent sugarbeets to the Chaska factory. Within a few years, other farmers from the Red River Valley were also producing small crops of sugarbeets to be sent to Chaska (University Archives). In the early 1920s, Red River Valley growers convinced the Minnesota Sugar Company to build a plant in their area on the condition area farmers help finance the project (Kotov, 2001).

In 1925, Minnesota Sugar was purchased by an investor-owned firm that would later become American Crystal Sugar Company (Kotov, 2001). Farmers came together to organize a bargaining association, Southern Minnesota Beet Growers Association (SMBGA), to represent sugarbeet growers in negotiations with American Crystal Sugar (ACS) (Trucano, 1997). Southern Minnesota growers continued to deliver their beets to the ACS facility in Chaska.

As processing capacity grew, growers began to increase sugarbeet production. Local processing capacity was crucial to the economic success of sugarbeet farms. To achieve greater production efficiency, farmers invested in specialized equipment such as defoliators and harvesters. This equipment was not used in other crop rotations, including corn and soybean. The absence of a processing facility in the area would leave farmers owning equipment of little alternative value. Proximity was also crucial to sugarbeet growers. Long hauls usually reduce grower returns, not only in terms of transportation costs but also in terms of lost sucrose content. Grower payments are generally based on the "extractable sucrose content of their beets" (Cattanach, Dexter and Oplinger, 1991). And, sucrose content declines quickly after harvesting, depending upon piling and temperature conditions (Brester and Boland., 2004).

Domestic agricultural policy played an important role in sugarbeet industry growth during the Post World War II period. The Sugar Act of 1948 supported domestic sugar prices and, consequently, production. This act, which remained in effect until 1974, established domestic and import quotas (Minnesota Historical Society).

Exhibit 3: Timeline of the Early Years: Southern Minnesota Beet Sugar Cooperative

Year	Event
1906	Sugarbeet plant opens in Chaska, MN
1941	Southern Minnesota Beet Growers Association formed to represent sugarbeet growers in southern Minnesota in negotiations with American Crystal Sugar
1960	Sugarbeets continue to be an important crop in the region, despite growing concern that government support for the sugar industry may be waning
1971	Chaska Plant Closes
1972	Growers in southern Minnesota begin organizing to build their own processing facility in Renville, MN to be named Southern Minnesota Beet Sugar Cooperative
1973	Growers in Red River Valley buy remaining American Crystal Sugar facilities and convert the company to a cooperative Southern Minnesota Beet Sugar Cooperative signs a joint management agreement with American Crystal Sugar
1974	Southern Minnesota Beet Sugar Cooperative must delay plans to open their factory due to construction delays and the uncertainty of financing arrangements
1975	Southern Minnesota Beet Sugar Cooperative begins processing sugarbeets, but their success was fraught with management and technical problems
1976	Southern Minnesota Beet Sugar Cooperative and American Crystal Sugar consider a merger Merger proposal fails to receive 2/3 vote among American Crystal Sugar shareholders
1977	Proposed merger with American Crystal Sugar is defeated again Southern Minnesota Beet Sugar Cooperative's financial backers fought to "cut their losses" and withdraw from the Renville processing facility Some growers decided not to plant their contracted acreage
1978	Southern Minnesota Beet Sugar Cooperative hires their own management team and amends bylaws to penalize growers who did not plant their full 1977 crop Southern Minnesota Beet Sugar Cooperative finally signs a long-term loan agreement that was achieved with the help of a loss-sharing agreement between construction lenders and the contractor
1980	Second year of successful operations at Southern Minnesota Beet Sugar Cooperative

Foreign policy also played a role in sugar production decisions. While sugar is produced in almost every country, cane producers have a cost of production advantage. When trade ceased between the United States and Cuba in the early 1960s, the US sugar industry hoped they would see a boost in their production quotas (Minnesota Historical Society). However, sugar imports from other nations made up the shortfall. American Crystal Sugar's strategic reaction was retrenchment, selling off what assets they could and closing plants that were too unattractive to be purchased. This is the volatile, excess capacity, low-margin environment in which the domestic industry found itself in the late 1960s.

By the early 1970s, Renville area growers had a substantial investment in sugarbeet equipment. Nevertheless, the Chaska plant, to which southern Minnesotan growers delivered, was an aging facility. Citing "small size, obsolescence, high cost of freighting beets, and the cost of renovating and adding pollution controls," ACS announced its decision to close the Chaska plant in 1971 (Southern Minnesota Sugar Cooperative). Sugarbeet growers in southern Minnesota were left without a market for their sugarbeets (Exhibit 4 and 5).

The SMBGA began the search for a sugar-manufacturing firm willing to build a processing facility in southern Minnesota. SMBGA approached several established companies including Michigan Sugar Company, Utah and Idaho Sugar Company, Amalgamated Sugar, C&H, Cargill, General Mills, Pillsbury, and International Multifoods. The companies' responses were generally consistent: returns on

Exhibit 4: Acres of Sugarbeets Planted in Select States as a percent of US Total Acres Planted, 1924-2004

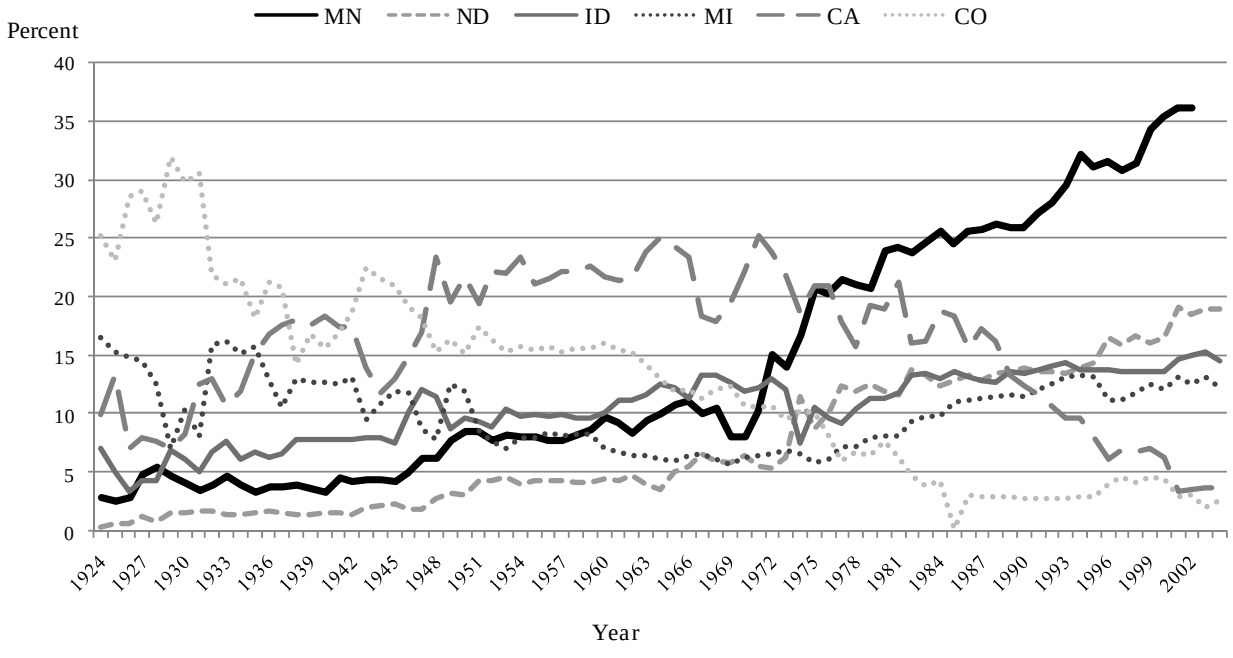
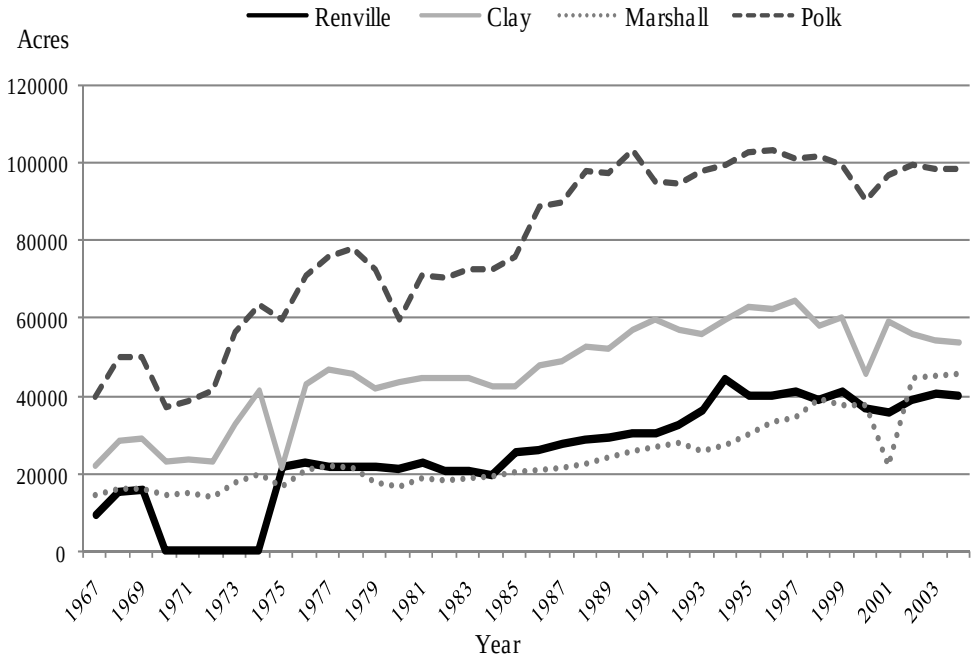


Exhibit 5: Acres of Sugarbeets Harvested in Select MN Counties, 1967-2004



investment in processing were not large enough to warrant building a new factory. Area growers concluded "if a factory were to be built," they would "have to do it themselves" (Trucano, 1997). But no single producer could afford an investment in a processing facility with efficient scale.

Similar problems faced growers north of Renville, in the Red River Valley. Producers were uneasy with the prospect of ACS plant closings. They noted that remaining ACS facilities were not being maintained properly. Therefore, the Red River Valley Growers Association (RRVGA) sought representation on American Crystal's board of directors (Volkin and Bradford, 1975). Members of the association decided to begin raising capital to purchase 100,000 ACS shares to ensure growers could "exert sufficient growing power to influence" corporate decisions. In the process, however, RRVGA decided to see if ACS would be willing to sell the organization outright. After almost two years of negotiations, antitrust hearings, and complex legal and financial arrangements, ACS, a New Jersey corporation, converted to a cooperative on June 14, 1973 (Volkin and Bradford, 1975).

The Red River Valley Growers, their experience and their decision to convert an investor-owned firm into a New Generation Cooperative encouraged and challenged Renville area growers to pursue a similar strategy. While Red River Valley growers organized to the north, a core group of growers in southwest Minnesota grew determined to own a local processing facility as well. The Southern Minnesota Beet Growers Association spent much of 1972 holding exploratory meetings with

growers. Their grand plans started with a small commitment from would be producer-investors. Plans to build their own processing facility began with SMBGA board members initially asking growers to put up only $5 per acre "to use as seed money" (Trucano, 1997).

In order to choose the optimal site for construction of a new processing facility, SMBGA set the following location decision criteria:

1) a central location was of critical importance because of the need to minimize freight problems (the Growers Association vowed not to repeat the freight problems experienced at Chaska);
2) adequate space (at least 600 acres) to permit the construction of waste water holding ponds and to serve as a buffer against neighboring landowners;
3) access to good highways and a financially-sound railroad;
4) availability of electricity; and
5) availability of a good water supply. (Trucano, 1997)

A section of land bordering Highway 212, just east of Renville, was selected as the best location. While producer-owned organizations can be vulnerable to influence activities among their members to affect the location chosen for building, SMBGA leaders took a Marshallian approach to deciding location: they attempted to co-locate their processing facilities with existing assets and infrastructure to capture any present external economies (Tong, 1997).

As growers' attempts to arrange financing, construction, and management of the sugarbeet processing facility ensued, their resolve was continually challenged by complex financing arrangements, construction design problems, poor initial operational efficiency, and low levels of commitment on the part of some producers. Growers contributed equity capital to the venture in proportion to the acres of sugarbeets they were contracted to deliver. Much of this equity capital was financed through a series of individual loans and guaranty funds. In other words, funds not contributed upfront, in cash, were made available by lenders only after (1) promissory notes were signed with each individual producer, (2) a guaranty fund was set up by the Cooperative to fund any defaults, and (3) producers agreed to make annual contributions to the guaranty fund to cover any potential defaults by fellow growers (Trucano, 1997).

The complexity and uncertainty of long-term debt financing agreements left the venture with little working capital and little ability to afford the high salaries of upper management. When managerial or construction problems ensued, delays were inevitable. Delayed construction combined with design problems, mechanical breakdowns, unresponsive management, and ill-prepared workers led to poor operating and financial results. Consequently, some growers did not fulfill delivery

contracts, further exacerbating the problem of operating efficiencies. Non-delivery of sugarbeets was a serious threat to the cooperative. The success of the sugarbeet processing facility would depend upon the producers' ability and willingness to maintain the supply of input factors while the facility worked to optimize operations. Producers began to realize they would only receive payment for their sugarbeet deliveries if the cooperative was profitable. Tensions ran high because growers had put their farms and their future at risk to invest in this venture.

While processing facilities opened and slicing began in 1975, it wasn't until 1978 that the cooperative was able to resolve many of its operating challenges. In 1978, the cooperative's board of directors amended their bylaws to give the ability to recover stock or penalty payments from growers who failed to honor their delivery contracts. The cooperative learned to appreciate the value of strict supply contracts. SMBSC also hired new management and finalized long-term financing agreements.

The cooperative's financial health depended on a settlement with construction lenders. Facing significant losses if the cooperative were to close its doors, construction lenders reached an agreement with SMBSC that would allow the processing facility to remain open. Fifteen percent of the loan amount was to be paid immediately. Profit-sharing mechanisms were also put in place with construction lenders for a fifteen-year period.

Today "Southern Minn," the area's first NGC, processes and markets sugarbeets and their co-products for the producer-owners. As farmers across the midwest were hit by an agricultural crisis in the late 1970s and early 1980s, sugarbeet farmers in Renville were entering into a new era of prosperity. Sugarbeet processing income provided an additional source of revenue and helped to stabilize the agricultural economy in the area while traditional corn and soybean crop farms suffered.

The NGC: Promoting Collective Investment through Organizational Innovation

Subsequently, grower groups from many states in the US and numerous countries have adopted variations of the investment and governance model developed by the sugarbeet growers in the Red River Valley and southern Minnesota. This governance, or organizational, structure has come to be known as the NGC. Governance structure, in this context, refers to the institutional framework and method of organizing producer-investors utilized to order their transactions, reduce potential conflict, and realize potential gains (Williamson, 1996).

Vaguely Defined Property Rights

When compared with the traditional agricultural cooperative model, numerous organizational design, internal incentive, decision authority, and property rights

attributes emerge as distinguishing characteristics of the NGC (Exhibit 6). The organizational innovations adapted in this model are hypothesized to ameliorate certain vaguely defined property rights associated with the traditional cooperative model. Vaguely defined property rights in an organization can exacerbate common cooperative dilemmas such as free-rider, horizon, portfolio, influence and control problems (Cook, 1995).

Exhibit 6: The Structure of Ownership and Control Rights in Cooperatives

Traditional Cooperative	New Generation Cooperative
Open membership	Defined membership
Growth capital from retained earnings	Growth capital from up-front equity investments and pooled retains
No obligation to deliver raw materials	Binding delivery contracts: right and obligation to deliver
No investment liquidity	Investment liquidity through limited transferable equity shares
No appreciation of investment	Capital appreciation through limited secondary market valuation

All organizations may be affected, to some degree, by vaguely defined property rights. The term vaguely defined property rights stems from the notion of incomplete contracting—the claim that all contracts inevitably contain gaps or loopholes. Why can't we develop contracts to cover all possible contingencies? Researchers generally look to three main arguments when explaining the incompleteness of contracts 1) unforeseen circumstances, 2) high costs of exhausting contingencies and 3) imprecision of language (Milgrom and Roberts, 1992).

Because contracts are incomplete, non-contracted or residual control rights and residual claimant rights must be assigned to one or more parties. Residual control rights are defined as the "right to make any decisions concerning the asset's use that are not explicitly controlled by law or assigned to another by contract" (Milgrom and Roberts, 1992). Similarly, residual claimant rights are the rights to receive any net income the firm produces after all contractual obligations have been met. The coupling of these rights ensures that actors bear the full financial risk of their actions. Decoupling of claimant and control rights creates the potential for agency costs and cooperative dilemmas, as those actors possessing residual control rights can make decisions that affect the net income available to claim without bearing the full wealth effects of their decision.

Decoupling of Residual Claimant and Residual Control Rights in the Traditional Cooperative

Cook and Iliopoulos argue that, in the traditional cooperative, claimant and control rights are slowly decoupled, resulting in an inefficient organization (Cook and Iliopoulos, 1999). Overtime, residual claimant and control rights are redistributed resulting in significant costs to the organization in terms of collective decision-making and agency costs. While this topic is as complex as the variety of cooperatives that exist, a few general examples can be given. In traditional cooperatives, membership is generally open to anyone choosing to deliver to the cooperative. A small fee, ranging from $25-$100 dollars may be assessed, but membership and voting rights are granted to any person meeting membership qualifications. Members may choose to deliver goods to or purchase goods from the cooperative, but are not obligated to do so. Depending on the market conditions, this often translates into fluctuations in supply and demand that are difficult to predict and manage, impacting the operational efficiency of the organization.

If the cooperative's payment method is a "cost of goods sold" (COGS) approach, earnings are allocated to members. To maintain certain tax advantages, twenty percent of the earnings must be paid in cash. Usually, marketing COGS cooperatives will distribute a greater percentage in the form of cash. The remaining allocated equity is kept within the cooperative as working capital. After a few years, allocated equity is returned at book value to the member in proportion to patronage. Before this allocated capital is returned to the member, however, cooperatives may have already experienced a decoupling of ownership and control rights. Those members maintaining a significant proportion of allocated equity may no longer be maintaining equivalent proportions of patronage.

In a pooled cooperative, which is the case in many NGCs, a portion of net revenue is retained for working capital use while the rest is distributed to members in proportion to patronage as "net proceeds." The allocated, but undistributed, capital is considered equity capital. Since this equity is redeemed at book value, there is little or no incentive to trade it and no opportunity for appreciation in value. In traditional marketing cooperatives, this equity capital is acquired in a passive or quasi-passive manner whereas, in NGCs, the original risk capital is invested "up-front." This up-front investment is called a delivery right (or share), is treated as a tradable and appreciable asset, and is non-redeemable. The amount of delivery rights is finite in number, thus decreasing some of the free-riding problems associated with open-membership cooperatives.

Membership, Investment and Contractual Characteristics of the NGC

Cooperatives that began in the early part of the twentieth century may have been able to borrow up to ninety percent in order to build their facilities. However, as

sugarbeet growers discovered in 1972, the cooperative banks were reluctant to lend more than sixty percent of project costs (Trucano, 1997). Therefore, if growers wanted to build a processing facility, it was necessary to capitalize the organization up-front, with significant initial grower investment. Up-front risk capital investments, processing efficiency, and quotas on sugar rendered a policy of open membership and voluntary delivery economically infeasible.

The NGC model builds on characteristics embodied in the sugarbeet model. These characteristics begin to ameliorate some of the "efficiency-robbing effects of vaguely defined property rights" in the traditional cooperative model (Cook and Iliopoulos, 1999). Non-redeemable equity investments provide both user and investor benefits. As a user, shares provide the farmer the contractual right and obligation to deliver a specified raw material. Shares are also appreciable and transferable, providing the farmer potential returns on the initial investment as well as limited liquidity. An initial share offering may be open to qualified producers as defined in the cooperative bylaws. However, after share offerings, membership is closed. Future user-investors must wait for another offering or purchase existing shares from a current NGC member to acquire delivery rights.

NGCs are a hybrid: a complex organizational structure subject to intricate state and federal tax codes. Cooperative organizers often note the substantial time and money spent with specialized legal teams and accountants. Organizers in other states, attempting to recreate the Renville model, have learned the importance of collaboration with organizers, accountants, and lawyers having expertise in these unique cooperative structures when beginning a new venture of this nature.

Producers Fighting to Survive Are Met with Opposition

Conditions were not favorable for adopting the traditional cooperative model in the 1980s. Traditional cooperatives had systematically relied heavily on debt to finance their infrastructure investments. But, cooperatives organizing in the 1980s were met with high interest rates and banks reluctant to lend to organizations with less than a fifty percent equity position. Banks were simply not in a position to take on the level of risk they held even a few years before with the development of SMBSC. Many farmers were convinced they needed to invest in processing facilities, adding value to their crops, in order to survive rapid consolidation in the agricultural industry. They decided to utilize the radically different organizational design pioneered by SMBSC.

Radical changes in governance structure, however, meant that cooperatives were created with defined membership: delivery of commodities was neither open nor voluntary. The proliferation of this new governance structure brought about strong reactions among local farmers. Many farmers were opposed to the notion of defined membership. They contended that the spirit of cooperation involved open

membership. And yet, the open membership model provided no incentive or mechanism for investors to provide risk capital to cooperative ventures, especially for capital-intensive processing entities. Growers were not unanimous in their views regarding this new governance structure. While farmers in the area debated over whether the innovative idea of defined membership was aligned with their view of cooperative principles, an eager subset continued a vertical investment strategy based on the NGC model despite debate.

Cooperative Fever: A Wave of NGCs in Renville and the Surrounding Area

The Minnesotan sugarbeet governance model was developed in part by following an organizational strategy borrowed from Suiker Unie in the Netherlands, another producer-owned sugarbeet cooperative. In consultation with Minnesotan growers, Suiker Unie leaders posed an important question: why were American new generation sugarbeet cooperatives only working with sugar when "most beets are grown in three year crop rotation schemes" (Egerstrom, 1994). Renville area growers took this line of questioning to heart. They began a quest to utilize the NGC model to add value to their corn and soybean crops (Exhibit 8). What happened next has come to be known as "cooperative fever" (Harris, Stefanson and Fulton, 1996; Patrie, 1999) .

Farmers began developing cooperative enterprises, applying the "sugarbeet model" to other crops (Exhibit 7). The 1980s and 1990s saw a wave of cooperatives develop in southern Minnesota and North Dakota. The sugar cooperatives in Renville and the Red River Valley served as generic models to growers of other commodities. As producers observed the success and challenges of the NGC structure, they began to modify organizational practices, policies, and bylaws to fit their membership preferences. Producers who developed leadership and organizational management experience serving on one cooperative board would subsequently share their expertise with other organizations by serving on multiple boards. Often, bylaws from a previous organization were consulted when forming a new entity. Familiarity with the model, its advantages and disadvantages, proved valuable as growers continued to tinker with organizational arrangements in an effort improve the sugarbeet model. This tacit knowledge, gained by leadership or investment roles in previous cooperatives, supplemented the emergence of NGCs in the area. Tacit knowledge is difficult to measure because it is generally acquired through experience or learning by doing (Arrow, 1962; Polanyi, 1966). Despite measurement difficulties, however, this concept enhances our understanding of the creation of new firms and cooperative development (Zook, 2004; Goldsmith and Gow, 2005).

The disadvantages of producing agricultural commodities including low per unit prices and volatile markets, spurred farmers to search for better strategies. From their experience with sugarbeets, farmers "understood the value" of their crops and

Exhibit 7: Renville Phenomena Timeline

Year	Event
1972	Growers in Southern Minnesota begin organizing to build their own processing facility
1973	Growers in Red River Valley buy remaining American Crystal Sugar facilities and convert company to a cooperative
1975	Southern Minnesota Beet Sugar Cooperative begins processing sugarbeets
1978	Southern Minnesota Beet Sugar Cooperative resolves management problems and amends bylaws to penalize growers who did not plant their full 1977 crop
1980	Minnesota Corn Processors forms
1989	Co-op Country explores investments to resolve equity redemption problems
1991	ValAdCo forms in order to pursue opportunities in the hog industry that had been identified by Co-op Country
1992	Phenix forms, exploring environmentally friendly building materials that utilize soy flour and wheat
1993	United Mills is developed by Co-op Country, ValAdCo and Golden Oval Eggs to meet local feed milling needs
	Churchill forms
1994	Golden Oval Eggs legally forms, producing liquid egg, as a strategy for adding value to members' corn.
1996	MinAqua forms utilizing soy pellets for tilapia feed
1999	Golden Oval Eggs expands to Thompson, Iowa
2004	Golden Oval Eggs converts to a Limited Liability Company

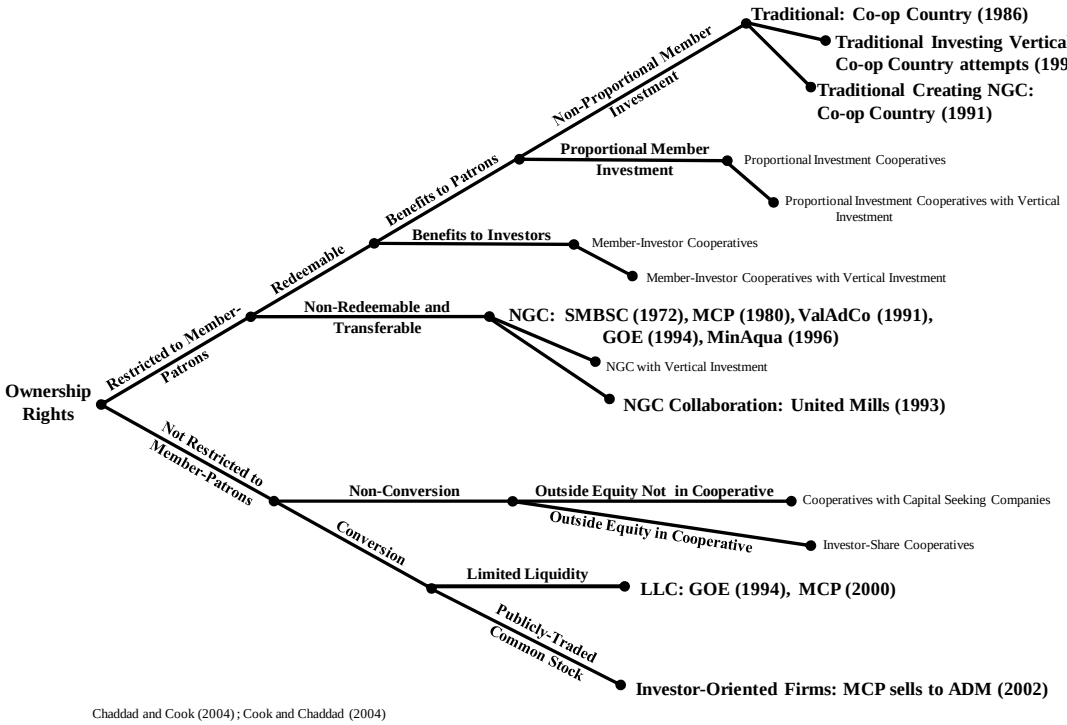
were no longer satisfied to deliver commodities "to the local elevator, with future profits enjoyed by those who refined and processed farm commodities" (Buschette, 2001). These farmers created an organizational structure that provided incentives to invest and the ability to gain necessary scale economies to compete with large agribusinesses (Exhibit 9). By expanding vertically, these producers were able to "profit" by utilizing their low cost commodities as inputs into their "value-added" cooperatives. Within a short period of time, a number of these models emerged in the Renville area. A brief description of a few of the organizations active in the development of this organizational cluster, as well as the way in which they were interconnected, follows.

Exhibit 8: Acres of Corn for Grain Planted in Minnesota Counties (Top 4 in 2004), 1972-2004

Year	Renville	Redwood	Martin	Stearns
1972	198,200	187,300	164,200	144,400
1973	224,000	211,700	167,500	164,600
1974	246,500	223,900	199,300	184,600
1975	242,700	225,700	211,600	179,100
1976	222,000	215,500	226,000	200,000
1977	166,700	182,000	195,000	217,500
1978	186,500	199,900	189,900	218,900
1979	186,300	192,700	188,400	223,700
1980	184,900	203,300	199,400	227,000
1981	190,700	208,400	196,400	251,400
1982	182,500	201,800	188,600	245,200
1983	129,200	146,800	136,700	164,100
1984	203,200	206,500	187,700	226,500
1985	203,400	200,100	183,900	226,200
1986	181,200	169,400	157,500	192,600
1987	152,000	155,600	155,500	193,200
1988	162,000	165,000	163,000	178,000
1989	180,900	190,800	182,100	184,900
1990	210,000	212,200	206,900	194,600
1991	209,300	208,800	161,900	234,600
1992	226,400	218,300	213,100	246,300
1993	222,400	194,100	188,500	188,800
1994	238,800	226,200	222,500	201,600
1995	221,100	208,700	201,600	231,500
1996	245,500	238,200	228,500	240,800
1997	232,900	221,600	207,600	215,500
1998	242,200	232,600	215,800	212,100
1999	239,900	233,600	217,600	206,700
2000	244,200	231,500	218,300	199,000
2001	239,500	231,000	207,700	200,000
2002	249,500	233,300	217,500	204,300
2003	246,600	233,300	216,200	208,300
2004	258,000	240,400	218,700	214,700

Source: U.S. Department of Agriculture

Exhibit 9: Ownership Rights Framework



Chaddad and Cook (2004); Cook and Chaddad (2004)

Key Stakeholders in the Development of a Cluster of Organizational Innovation

Minnesota Corn Processors

In 1980, farmers "disillusioned with corn prices" decided to pursue a strategy of processing their own products (Gerber, 1996). They formed Minnesota Corn Processors (MCP) in order to process corn into "ethanol, starches, syrups, dextrose, feed, and corn oil" (Buschette, 2001). Aided by, $1.86 million in tax-increment financing from the city, MCP's $55 million plant opened in 1983. While their success was not immediate, MCP's eventual prosperity led them to expand three times in the early 1990s.

The MCP plant is located in Marshall, Minnesota, approximately fifty miles from Renville. While the plant was built outside their county, Renville farmers were instrumental in soliciting equity capital contributions and designing the governance structure. Several farmers who had a wait-and-see attitude with respect to SMBSC were determined not to miss out on this investment opportunity. As sugarbeet processors turned a profit on their investment, those producers solely involved in corn and soybeans clamored to enter a successful processing venture (University of

Manitoba). Due to their closed nature, it would result difficult to buy shares of a successful NGC after the initial offering.

Co-op Country Farmers Elevator

Co-op Country is a traditional cooperative headquartered in Renville, MN. In early 1990, Co-op Country recognized that a "large number of their patrons would reach retirement age within a few years," causing the cooperative to suffer financial constraints in redeeming member equity (Buschette, 2001). This was a pressing issue for many traditional cooperatives. Originally, Co-op Country board members explored potential investments that would serve as an additional source of income to solve this equity bubble problem. The value-added projects considered included swine, turkey, and egg production. Ethanol was ruled out because, they felt, MCP was already available to their members as an investment opportunity. The hog industry was chosen as the most viable venture.

However, the discussion over potential investments in swine or sow multiplier units became emotionally charged. An investment in sow multiplier units was eventually rejected by a majority of Co-op Country members due to concerns that the cooperative's involvement in the industry would drive local farmers out of the hog business. Board members were disheartened after the vote – and concerned that their plan to resolve their equity redemption problem would not come to fruition. Within days, however, board members began receiving phone calls from members, urging them to develop alternative business plans and offering to support ventures that allowed farmers to invest "alongside" Co-op Country. They urged the Co-op Country board to explore a cooperative similar to SMBSC in structure, with Co-op Country acting as a major investor. Co-op Country management continued to explore alternative business opportunities.

ValAdCo

One group of farmers decided to pursue the swine production idea rejected by Co-op Country's membership (Buschette, 2001). Co-op Country was a large organization with a diverse membership. A smaller subset of Co-op Country farmers was better able to organize their interests as a separate entity. ValAdCo's intent was to add value to members' corn, utilizing corn for feed in sow multiplier units. Having received a mandate from their members not to pursue investments in the swine industry, Co-op Country shared their industry research and business plan with ValAdCo founders. ValAdCo, then, worked from the bylaws of MCP, SMBSC, and Dakota Growers Pasta, (a NGC in North Dakota) to develop their governance structure. Bylaws from each of these organizations were readily available to ValAdCo leaders, as many of them were members of these NGCs as well. ValAdCo leaders also chose rely on the same legal representation as SMBSC, a firm that had become well-versed in this distinct ownership structure over the years.

Churchill Cooperative

Another Renville corn marketing NGC, Churchill Cooperative, also chose to invest in sow multiplier operations. ValAdCo and Churchill "built two of the biggest and most controversial hog farms in the state" (Losure, 1999). For a number of years these two NGCs were considered pioneers in a growing producer-owned livestock sector. They pioneered a new technology that involved storing manure in open lagoons. This technology, now characterized as "failed" and "outdated," caused Churchill and ValAdCo to suffer from problems involving environmental regulation, legal fees, and community opposition (Losure, 1999). Churchill leaders gained their familiarity with the NGC structure through more than proximity: the majority of leaders were investor-members, Board members, and core organizers of SMBSC.

Golden Oval Eggs

After failing to gain the membership's approval to invest in the hog industry, Co-op Country searched for new opportunities that met their members' investment and growth preferences. The egg industry was their next venture. In 1994, a business venture planned and initiated by Co-op Country established the NGC Golden Oval Eggs. Co-op Country invested twenty-five percent of the necessary equity for Golden Oval Eggs. The remaining equity investments came from grain producers in the Renville area.

The founders of Golden Oval developed a plan to add value to members' corn by using it as feed in layer operations. And, they chose to produce raw, liquid egg "in part because of ease and savings in transportation" (Buschette, 2001). Golden Oval developed a strategy called the "Totally Integrated Food System" (Golden Oval Eggs). This system began with high quality grains produced by shareholders, relied on a single local supplier for pullets, and linked laying barns with breaking and cooling systems – allowing Golden Oval to control all aspects of production from the feed to the final liquid product. The integrated system provided significant levels of quality and consistency (Buschette, 2001).

Through delivery requirements and marketing agreements, NGCs have the potential to exercise greater control over supply and production process than investor-owned firms purchasing inputs from independent producers. Ability to control inputs, as well as the entire production process, can improve quality. This provides producer organizations with significant advantages over non-cooperative businesses.

United Mills

Recognizing the need to meet increased feed milling requirements, the boards of Co-op Country, Golden Oval, and ValAdCo decided to negotiate the construction of United Mills. A "collaborative venture between a value-added co-op and a traditional co-op was a new idea….Such a project had simply not been considered before" (Buschette, 2001). Organized as a cooperative in 1993 and built in 1994, the equity investment of $750,000 was divided equally among the three founding members.

United Mills had a joint management agreement with Co-op Country. Treated as a cost center, United Mills charged members a standardized price allocated on a per-ton basis; variable delivery fees and future capitalization allotments were also included. During the first three years, production efficiencies and increased volumes lowered the per ton charges from $20 to $6. Within three and one half years the members recuperated their original investment. The NGCs were able to meet their milling needs for rations while Co-op Country generated direct profits from selling the milled product.

Phenix Biocomposites

In 1992, Phenix Biocomposites was formed as a NGC. Located in Mankato, MN, about 100 miles southeast of the City of Renville, Phenix had a new technology to make biocomposites for the construction, furniture, and design industries. Their products, which are environmentally friendly alternatives to wood or marble, utilize agricultural materials including soy flour and wheat (Environ Biocomposites). Again, Renville area farmers were active investors, anxious to develop a value-added NGC for yet another crop in their rotation.

MinAqua Fisheries Cooperative

MinAqua processes producers' soybeans to soy pellets for use as tilapia feed. Generating enough warm water to raise tilapia in Minnesota would never have been possible, however, without SMBSC. The beet processing facility produces six to ten thousand gallons of nutrient-rich, 95-125 degree water per minute as a by-product of beet processing. Since the SMBSC plant was dedicated, city officials talked of utilizing its excess hot water for commercial purposes. After receiving a $500,000 federal economic development grant in 1997, the City of Renville developed a heat recovery plant. Cost savings estimated at one to three and a half dollars per million BTUs (British Thermal Units) were enough for MinAqua to be a feasible project. MinAqua utilizes only ten percent of the available heat energy. Therefore, Renville is looking to take advantage of industrial symbiosis opportunities by developing additional local businesses around this low cost heat energy.

Understanding the Renville Phenomena

As discussed above, Renville NGCs share many characteristics. All are producer-owned, pursue "value-added" strategies, are run by demanding, active investors, and – most importantly – have adopted the "new generation" organizational structure. The geographic concentration of such firms can hardly be coincidence. As in any cluster, the firms derive benefits resulting from their strategic relationships and their proximity. Indeed, Renville's cooperatives have a lengthy history of inter-organizational collaboration – not just in terms of co-investment, but also in terms of overlapping board appointments and working together to utilize co-products.

MinAqua utilizes wastewater from SMSBC, turning the warm, nutrient-rich water into a valuable input. Other co-products have proven to be profitable and resulted in high local demand. For example, Co-op Country has developed a manure management program to help area livestock producers comply with environmental regulations (Stefanson, Fulton and Harris, 1995). The program removes manure from local livestock or aquaculture cooperatives and incorporates it into a fertilizer mix to sell to their members (City of Renville; Stefanson, et al., 1995). This program serves local farmers' demand for fertilizer. In the case of chicken litter, demand is high enough that there is "a waiting list for the litter" (City of Renville).

Buschette reports that some farmers' only regret is that "they cannot sell more corn to the co-op," suggesting that local demand for the development of additional NGCs is still high. Farmers perceive the NGC as an opportunity to invest in ventures that generate a market for their agricultural goods, benefit the local community, and preserve the family farm. The brisk wave of cooperative development did, however, leave some pockets too thin to invest in later ventures such as MinAqua. Many individuals or families that invested in one NGC, invested in several ventures (Looker, 1999).

An investment in an NGC is now seen as a "proven investment." And, some young producers are able to borrow from banks to invest in a large, cooperative venture whereas they would not qualify for funds for such risky endeavors on their own. Cooperation and collaboration, in itself, may also be an investment. Does a long history of cooperation serve as an investment in social capital, increasing the community's capability of pursuing collective entrepreneurial strategies? Can successful attempts at cooperation be seen as an investment upon which subsequent cooperative endeavors, familiar with local successes, are able to capitalize? Studying communities such as Renville may inform this question.

Continuing Innovation: Success or Failure?

Clusters of organizations sharing similar characteristics provide a rich setting for research on networks, alliances, clusters, and other forms of inter-firm

collaboration. Many of the factors cited in existing research on clusters – knowledge spillovers, scale economies, learning by doing, and path dependence – are important elements of the Renville story. Moreover, Renville's experience allows us to analyze several layers of changes in governance structure over time.

After a steep rise in corn prices, a glut of corn syrup in the market, and weak delivery contracts, MCP was forced to look beyond their members for capital investment. MCP converted to a Limited Liability Company (LLC) in 2000, appearing to begin a successful turnaround. However, in 2002, MCP members voted to sell to Archer Daniels Midland Corporation for $756 million (Powell, 2003). While some sellers viewed MCP as a success due to high levels of returns on their initial investment, many producer-members were disheartened at the loss of local ownership and control of the facility.

Golden Oval Eggs has also converted to a primarily producer-owned LLC as a means to access additional equity capital. Considering these conversions, several questions arise. Is the NGC a stable form of organization, or merely a transitional form between the cooperative and the investor-owned corporation? Indeed, both Golden Oval and Minnesota Corn Processors, despite success as NGCs, converted to LLCs. Is this the future for the remaining NGCs as well? If so, does conversion to an investor-owned entity constitute further innovation? Or, does it constitute cooperative failure? Opinions differ among academics and investors[2].

Organizational Innovation, Local Clusters, and Secure Markets for Production

The experience of producers in Renville, MN suggests that organizational innovation, in addition to technological innovation, plays an important role in enabling farmers to remain competitive in the global marketplace. Organizational innovation that promotes local ownership allows residual profits to return to the producer's community. This is an exciting alternative to industrial park development which often generates employment, but transfers profits to investors outside the local area.

We look back over Renville's history of collective action among producers in an effort to understand the key factors that led to their success. What specialized knowledge, distinctive attributes, or unique resources led to the emergence of this cluster of organizational innovation? Can similar clusters of producer-ownership be replicated in other areas? If so, what spurs multiple producers to investment in locally-owned and controlled organizations? By answering these questions, today's

[2] Please refer to LeVay (1983) for a discussion of cooperative objectives. By understanding a cooperatives objectives, we may begin to define success, innovation, and failure. LeVay, C. "Agricultural Co-operative Theory: A Review." *Journal of Agricultural Economics* 34, no. 1 June (1983): 1-44.

farmers can develop mechanisms for vertical investment and integration, allowing them to secure sustainable markets and higher returns for their production.

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