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New Generation Cooperatives and Cooperative Theory

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North Dakota and Minnesota are currently witnessing a renewal in the growth of cooperative enterprises. At the heart of this renewal lies the so-called New Generation Cooperative (NGC), a term that has been applied to the dozens of value-added processing, selected membership cooperatives that have recently formed in the region's agricultural sector. A key organizational feature of NGCs is the linking of producer capital contributions and product delivery rights. This paper describes the organizational features of NGCs and positions them in the broader context of cooperative incentive structures, governance structures, and the cooperative development process. More generally, the paper uses NGCs as a lens through which important elements of cooperative theory can be reviewed.

The north central United States agricultural sector is currently witnessing a renewal in the growth of cooperative enterprises. This resurgence of cooperative development has been referred to as a "cooperative revival" and "co-op fever" and has had people from all over North America visiting the region to understand how and why it has become such a hotbed of new cooperative development. At the heart of the cooperative revival lies the so-called New Generation Cooperative.

New Generation Cooperative (NGC) is the term that has been applied to the dozens of value-added processing, selected membership cooperatives that have formed in the North Dakota and Minnesota area in recent years (Egerstrom 1994). The new cooperatives have sprung up in virtually every sector of agricultural production in the region. They are being formed by producers involved in emerging niche markets, such as bison processing, tilapia production, organic milling, and specialty cheese processing, as well as in more traditional, value-added activities such as corn sweetener production, sugar beet processing, pasta production, and hog operations.

A common reason for the formation of NGCs is the desire to develop new value-added products and to gain access to an increased share of the consumers' food dollar. NGCs represent a younger generation of farmers preparing to tackle the challenges of deregulated markets, specialized market niches, and increased vertical coordination and integration (for a good description of how agricultural markets are changing, see Drabenstott 1994). The impact of NGCs also goes well

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beyond the farm gate as people in the region believe "co-op fever" has been a successful rural development strategy responsible for boosting rural disposable income, employment, and population (James 1995).

The unprecedented pace of NGC start-ups and their apparent success as a development tool has raised substantial interest in duplicating the phenomena in other regions across rural North America. However, little information on NGCs and their development has been documented. The strengths and weaknesses of the NGC organizational structure, relative to more traditional cooperative structures and other business organizations, have not yet been clearly identified. Nor have the benefits to producers and their communities been adequately quantified to allow for comparisons with other forms of development tools.

The objective of this paper is to provide a description of the key features of the new generation of cooperatives of North Dakota and Minnesota and to position these key features in the context of cooperative theory. More generally, the paper uses NGCs as a lens through which important elements of cooperative theory can be understood and reviewed. Describing the organizational structure and the development process of NGCs and placing these within the larger context of cooperative theory provides the basis for additional research into NGCs and their development.

Organizational Features of NGCs

Despite the name, the organizational features of NGCs are not really new. Each of the characteristics that together define NGCs can be found in other cooperatives at other points in time. However, NGCs do represent a case where all these characteristics have come together at the same time and are shared by a substantial number of newly formed cooperatives.

A key feature of NGCs that distinguishes them from other more traditional cooperatives is the linking of producer capital contributions and product delivery rights. In fact, the NGC is an example of a very strict base capital plan in that a member's patronage and a member's equity are always equal. Operationally, the sale of membership equity shares is used to raise capital to finance the NGCs. The membership equity share also acts as a contract between the members and the cooperative; the contract stipulates the member must deliver the contracted quantity (producers must fulfill their contract obligations with their own product or purchase product elsewhere for delivery) and the cooperative must purchase the product (subject to meeting quality requirements). As with other contractual agreements, contingencies are incorporated into the NGC contract to account for unusual occurrences, such as crop failure. Equity shares are typically tradable, subject to the approval of the cooperative's board of directors.

The quantity and price of delivery right shares issued by the NGCs are determined according to the amount of product needed for efficient operation of the cooperative's processing facilities and the amount of capital required to purchase these facilities. In general, the NGCs have followed recommendations to raise between 30 and 50 percent of their total capital requirements through the sale of delivery right shares. Remaining capital requirements are met through debt or the issue of preferred shares. The cooperative and state banks have been instrumental in providing debt capital to NGCs in North Dakota and Minnesota. The North Dakota State Bank and the Farm Credit system also lend money to members for the members' equity contributions. Preferred shares enable equity contri-

butions to be obtained from the community or other interested parties, but the holders of preferred shares do not have voting rights and receive a limited return on these shares (for example, in North Dakota this limit is legislated at 8 percent).

The initial price of each share is generally determined by taking the total amount of capital the cooperative wishes to raise for start up and dividing it by the number of units of farm product that can be absorbed by the processing facility. Equity drives are held to solicit support and sell shares to future members. Because equity shares are in the form of a delivery contract, membership is restricted to producers who wish to deliver a portion of their production to the proposed processing facility. After the initial equity drive, shares can be traded pending board approval. The share prices during the operation phase reflect the returns members expect to receive from the cooperative over time. In valuing the returns, members can be expected to examine the difference between the cost of producing the farm product and the revenue generated from processing this product and selling it to a further downstream market.

Regardless of the number of shares purchased by a member, the principle of one-member, one-vote still applies when electing a board of directors and when deciding on major cooperative policy issues. As well, the earnings of the cooperative continue to belong to the members and are distributed to the members on the basis of their patronage. Hence, NGCs have incorporated tradable delivery rights into their ownership structure while leaving the critical cooperative features of member-control and member-use untouched.

Tradable delivery rights are not unique to NGCs. Delivery rights have usually been implemented by an established cooperative to limit the size of the marketing pool. Member shares are typically determined by the cooperative and based on the delivery history of the member (Moore and Noel 1995). However, the delivery rights in these cases are separated from the member's equity contribution and are, therefore, distinct from the ownership of the cooperative itself. In contrast, the NGC delivery right shares explicitly link equity contributions and delivery rights from the time members join the cooperative.

NGC membership entitles farmers to a guaranteed market for a portion of their production, a share of the earnings generated by the cooperatives' processing operations, and any change in the value of the tradable shares. Because members have financed a substantial portion of the capital of the cooperative up front with an equity infusion, a significant portion of the earnings generated by the cooperative's operations is returned to the members at the end of the year on the basis of their patronage. If members decide to sell their shares and forgo the right to deliver to the cooperative, they will receive a capital gain or loss, depending on what has happened to the price of the shares.

As an example, the members of the Dakota Growers Pasta Company (DGPC) in Carrington, North Dakota, raised \$12 million in equity capital to build a \$40 million pasta processing facility through the sale of equity shares. Each share entitles members to deliver one bushel of durum to the pasta processing facility. The initial share price was \$3.90, and farmers were given the opportunity to purchase a minimum of fifteen hundred shares at the initial share price during the cooperative's equity drive.

Current share prices are approximately seven dollars and reflect the benefits members expect to receive from the cooperative. These benefits are twofold. Members receive a percentage of the current market price when they deliver

their durum to the plant. At the end of the year, producers receive a second payment incorporating the returns generated in processing durum for pasta products under their own DGPC label and under private label for other food companies (Campbell 1995). Future expansion of the cooperative will be financed in the same way the cooperative was originally financed. Existing members or new members will provide 30 to 50 percent of the capital required for the expansion through the purchase of delivery shares.

Positioning NGCs Within Cooperative Theory

The rise of NGCs and the unique combination of organizational elements present in NGCs have generated substantial interest in these cooperatives as a model for agricultural, cooperative, and rural development. In particular, NGCs have highlighted three major themes in cooperative theory: (1) incentive structures, (2) governance structures, and (3) the cooperative development process. The purpose of the following sections is to position NGCs in the context of this theory and to use NGCs as a lens through which important elements of this theory can be understood and reviewed.

Incentive Structures and Opportunistic Behavior

Recurring themes in cooperative theory have included cooperatives' ability to raise capital, limit opportunism, exploit local knowledge and facilitate the flow of information, and increase competition in oligopolistic markets. A common element in these themes is that of incentives, particularly as it relates to opportunistic behavior. While the question of incentives in cooperatives has frequently been discussed by comparing cooperatives with other forms of business, relatively little discussion has been devoted to comparing different cooperative structures (a notable exception is the paper by Cook [1995]). In this section the NGC's strengths and weaknesses in aligning member incentives are compared to those of other cooperative forms.

Capital Acquisition

Capital acquisition has long been cited as a problem for cooperatives (Helmberger 1966). The difficulties cooperatives face in raising funds is receiving increasing attention as cooperatives diversify their operations to include further processing activities (Harris 1995). The restructuring of cooperatives as investor-owned firms (Schradler 1989) and cooperatives' adoption of hybrid structures (see Saskatchewan Wheat Pool [1995] for an example of a hybrid structure) to raise capital also highlights the importance of capital acquisition.

Capital acquisition in cooperatives has been viewed as a problem for two reasons: (1) the free rider problem, and (2) the horizon problem. Both of these problems involve opportunistic behavior on the part of members. The free rider problem arises because, in most traditional cooperatives, ownership *per se* conveys no benefit; instead benefit is obtained when members patronize the cooperative. The result is that members have no incentive to invest in the cooperative, even though investment is critical to the cooperative's success (Knoeber and Baumer 1983).

The horizon problem refers to the disincentive for cooperative members to invest in long-term projects. Because returns generated by cooperatives are redistributed to members on the basis of patronage, members will naturally prefer investments that will provide payoffs during their expected patronage period

rather than after. Sexton (1991) points to the horizon problem as being the greatest impediment to the successful entrance of cooperatives in value-added processing activities. Value-added processing activities require large capital commitments (for example, to commission feasibility studies, build processing facilities, advertise, and hire an experienced management team) that will generally only pay off in the long run (Royer and Bhuyan 1994).

Cooperatives have traditionally tried to mitigate the free rider problem and the horizon problem by retaining earnings as member equity. Earnings retained for investment must eventually be returned to the members. As a result, retained members' earnings are more like a form of debt than a form of equity; the redemption of retained equity can place a drain on a cooperative's asset base and lead to slower growth (Caves and Petersen 1986). For members, this obligatory investment in the cooperative is commonly returned at book value, regardless of the value of the cooperative business itself. Hence, members do not receive a return on their investment that reflects the growth in the value of their firm, unless the business is dissolved and sold (Schrader 1989).

NGCs appear to have overcome the free rider and horizon problems by fundamentally altering the incentive structure associated with cooperative ownership. By tightly linking equity contributions to tradable delivery rights (that, in turn, provide members with a right to a residual claim on the cooperative's earnings), NGCs require members to invest in the cooperative in order to benefit from its use. The requirement that capital be invested up front eliminates the incentive for members to reduce or eliminate their capital investment on a year-by-year basis. The transferability of shares provides the cooperative with a permanent source of equity and provides producers with the opportunity to realize the value of their equity without the cooperative's dissolution. This latter feature should allow members the ability to capture the discounted returns expected from the cooperative's investments, regardless of when these returns are generated.

The generation of significant up-front equity contributions from members facilitates the involvement of NGCs in capital intensive, value-added processing activities. Up-front equity provides a significant equity base that allows the weathering of business cycles. The acquisition of debt financing is also made easier because banks are given a solid indication of producers' commitment to the project.

The alteration of organizational form has other repercussions. Some producers, regardless of their interest in the project, may have difficulty raising the capital required to purchase NGC shares during start up. This barrier can be significant as the minimum capital requirement for NGC membership is often high. To ensure new members are given an opportunity to join, many NGCs have implemented special arrangements, such as the leasing of shares. For example, young dairy farmers who join the Dakota Dairy Specialties Cooperative, a specialty cheese cooperative in Hebron, North Dakota, can buy stock at the initial selling price and pay for it over a five-year period. The North American Bison Cooperative, a bison processing facility in New Rockford, North Dakota, allows new bison growers to buy shares in their bison processing plant based on projected future production rather than current processing needs.

A second repercussion is that members who purchase shares after the initial equity drive may be placed at a disadvantage. Assuming the cooperative is successful and the market price of delivery shares reflects the net present value of the expected returns from future patronage, any original members who subsequently

sell their shares will receive a capital gain. The new members who purchase these shares will not receive this gain; the benefits they receive from membership will be limited to receiving a competitive price for their product plus any growth (or fall) in the value of the shares that goes beyond the expectations in place when the shares were purchased. There is a potential upside, however, to this situation. Since the share price will continue to increase if members and potential members have a positive perception of investment decisions made by the cooperative, NGC equity shares may provide an incentive for producers to not only become involved in the initial formation of the cooperative, but to also further the success of the cooperative beyond the initial expectations.

Limiting Opportunism

Economists argue that a necessary precondition to cooperation are sets of economic incentives that motivate individuals to act collectively. Vertical integration concepts have greatly contributed to cooperative theory by providing a framework with which to examine farmers' economic incentives to form cooperative enterprises. The lowering of the costs incurred in forming alliances and transacting in the market is cited as one of the primary motives for firms to internalize processes further along the marketing chain (Perry 1995).

Transactions costs are particularly significant when opportunistic behavior is present (Williamson 1987). Opportunistic behavior occurs when an individual, organization, or institution takes advantage of the power they possess in a market or contractual setting. As Williamson argues, one of the key factors in providing power to an individual, organization, or institution is asset fixity. Asset fixity occurs when the cost of transferring an asset to some other production activity is large. The lack of alternative uses for an asset increases the threat of potential exploitation by other players and provides an incentive to vertically integrate and avoid becoming "locked into" transactions with another firm (Klein, Crawford, and Alchian 1978).

Farm enterprises face a substantial risk of opportunistic behavior. Highly perishable farm products are sunk assets once they are harvested, while very specialized inputs are frequently required for production. By enabling farmers to integrate up or down the marketing chain, cooperatives provide an institutional mechanism for avoiding opportunism. Through producer representation, the cooperative can take account of the impact of its pricing decisions on its members. Therefore, unlike a for-profit firm, the cooperative has an incentive to adjust its prices and output to maximize the joint profits of both the cooperative business and the farm enterprises it represents (Sexton 1986b).

However, despite the vertical linkages to the farm enterprises, Sexton (1986a) notes that cooperatives still retain the semblance of market exchange. The presence of a market exchange can make members vulnerable to opportunism on behalf of the cooperative; the cooperative may also be vulnerable to opportunism on behalf of the members. For example, if members continue to act as individual profit centers, their behaviors may run contrary to the best interest of the integrated entity (the cooperative and all of its farm members considered together). Since the assets involved in adding value to agricultural production are often specialized and hence fixed, the success of processing cooperatives is easily jeopardized if members disregard the well-being of their cooperative in favor of the success of their own operation (Statz 1987b).

Member opportunism is a prominent problem in cooperatives that have a policy to accept all member deliveries. In this type of cooperative, members have an incentive to shirk on quality, as the individual producer does not carry the full liability of such behavior. The problem is made more pronounced by fluctuations in commodity prices or product quality. Members may view their cooperative as a clearinghouse for product during periods of low prices and quality, but may bypass the cooperative in favor of other marketing channels when prices and/or quality are high. Such behavior limits the ability of the cooperative to control the quality and quantity of the output it sells, making it difficult to meet customer and market needs.

Cooperatives can deter both member and firm opportunism through the contracting of delivery rights. Delivery contracts allow for efficient levels of production to be achieved for processing operations and guarantee a market for a fixed portion of members' production. The restriction of deliveries through clearly defined quality control mechanisms can enable the processing cooperative to develop brand reputations based on quality and specific attributes. Such contracts may be particularly important for emerging industries where a firm's entry is feasible only if it is assured a given quantity or quality of a product. For farmers, delivery contracts provide them with an assured market for their product and enable planning efficiencies.

NGCs are not unique in using delivery contracts to avoid opportunism. Other marketing cooperatives, particularly in California, have also contracted with members for the delivery of specified product to processing facilities (Sexton 1991). However, the NGC delivery shares represent more than simply a marketing contract between the members and the cooperative. NGC delivery rights also represent a right or claim to the residual earnings of the cooperative. In his theory of property rights, Barzel (1989) argues that the establishment of such rights or claims is not by accident. Barzel argues that the most efficient method of organizing production is to make the owners of those services that are the most variable and unpredictable the residual claimants of production. Thus, cooperatives can be seen to be institutions in which the members have been granted some rights to the output of the cooperative so that they, the members, are less likely to act opportunistically and reduce the benefits flowing from the production process. Less opportunistic behavior by members would include such things as ensuring the quality or nature of the inputs that they supply (Fulton [forthcoming]).

In the light of this theory, NGCs can be seen as an institutional form that provides members with a clear residual claim on the cooperative's output, a claim that should be expected to have some efficiency effects. Preliminary evidence on American Crystal Sugar, one of the oldest NGCs, suggests the vertical integration of beet growers has had significant efficiency consequences, particularly in terms of increased quality of sugar beets. Koenig (1995) reports that the integrated ownership of the supply of beets and the processing company reduces the transaction costs of the complex contracting that is required to achieve these production efficiencies.

Efficient Use of Information

The efficient use and coordination of knowledge and information is another factor that can motivate the further vertical integration of firms. Efficiencies can be achieved by ensuring that the knowledge base of each of the market players is

properly exploited and that information regarding product characteristics, and preferences for certain characteristics, is effectively communicated. Communicating information regarding the characteristics of agricultural products and the preferences of the final consumer is key in matching supply and demand. However, the coordination of information is complicated when a large number of firms are involved in the production and distribution of a product. Following Barzel (1989) again, an incentive therefore exists for firms to vertically integrate in order to overcome some of the complications, and hence costs, in acquiring and preserving information.

Cooperatives have the potential to exploit information more efficiently than other forms of vertically integrated firms for two reasons. First, both members and cooperative firms face a greater incentive to gather and transmit information. Cooperative members have more incentive to track and communicate product characteristics to an enterprise in which they have an ownership stake and a claim on the residual earnings. Cooperative firms have a greater incentive to acquire information regarding the consumer preferences since their investors, the producers, will capture the benefits that accrue from such research. However, Shaffer notes that the information regarding market preferences for product characteristics may not be exploited by cooperatives due to a reluctance by members to alter production practices. He suggests that contracts between members and their cooperatives can improve the match between the supply and demand for product attributes. Providing farmers with clear rights to the residual earnings of the cooperative is also likely to encourage this match.

Second, cooperatives represent a way of obtaining the benefits of scale economies while at the same time retaining knowledge of basic agricultural production. Contrast, for instance, a cooperative formed by farmers vertically integrating forward into processing activities and an investor-owned production/processing firm formed by vertically integrating backward into agricultural production. Although both institutions are examples of vertical integration, they differ fundamentally in the ways they are organized. The foundation of the cooperative consists of numerous independent farm enterprises, while the core of a large corporate farm structure is typically an investor-owned agribusiness. This difference in organizational structure can allow the cooperative to exploit the specific farm management skills possessed by the farmer members while maintaining processing scale (Staatz 1987b). Farm-level decisions usually require a great deal of time- and site-specific managerial input. Unless the production conditions in agriculture can be tightly controlled, the vertically-integrated, investor-owned firm is unlikely to be as efficient in the production of the agricultural product as are independent farmers.

Information regarding product characteristics is expected to have a greater impact on the operations of an NGC, which limits its operation to the processing of one commodity, than on a marketing cooperative with diversified operations and, hence, many different products and product characteristics. The narrow, value-added focus of NGCs likely increases their ability to exploit the members' knowledge of product characteristics by facilitating the grading or segregation of product at the farm level. Segregation further along the marketing chain is almost inevitably more costly since products of different grades must be separated after they have already been combined. Undertaking grading activities at the farm level is often much less costly because farmers can grade or segregate as production occurs. By integrating to include value-added processing, NGC members are thus

well placed to partake in identity preserving activities increasingly demanded by consumers (Smith and Wallace 1989, Unnevehr 1993).

Offsetting Market Power

One of the forms of opportunistic behavior that cooperatives have traditionally offset is that of market power. As an example, for-profit processing firms will be able to act monopsonistically in the purchase of the farm product if there is some degree of asset fixity in both the production of the product by farmers and in the processing of the agricultural output by the processing firm. Vertical integration through cooperatives can reduce farmers' reliance on monopsonistic market structures (Staatz 1987b). The presence of a cooperative can also have the impact of increasing the overall level of competition by providing a "competitive yardstick," forcing investor-owned firms to provide comparable services and prices (Cotterill 1984).

For cooperatives to be successful in offsetting market power, they must integrate to the stage in the industry where the market power is being exerted (Sexton and Iskow 1988). NGCs' involvement in value-added processes allows farmers to bypass a number of the traditional marketing channels right up to the wholesale and retail markets. Whether or not this degree of integration is sufficient or necessary to avoid market power is highly dependent on the structure of the industry; if market power is limited to the next stage downstream from the farm, marketing or bargaining cooperatives may enable farmers to exert the required countervailing power (Sexton and Iskow 1988, Levay 1983). In addition to offsetting market power, there is a concern as to whether NGC formation may displace business or cooperative channels that are already behaving competitively.

The limited membership structure of NGCs has important implications for the "competitive yardstick" result. An NGC has the effect of isolating a portion of producers within the market; producers who are not members are not given the option of delivering to the cooperative (unless they are given the opportunity to buy shares) and remain at the mercy of oligopolistic market power (Cotterill 1987). This may be a particularly uncomfortable situation for NGCs serving producers in specific geographic communities.

Further growth in NGCs could lead to market saturation in which cooperatives compete against each other. Such competition is likely to be advantageous for consumers, retailers, and wholesalers, while the existence of these cooperatives would also redress market power exerted against farmers. Therefore, a cooperative system that has several limited membership cooperatives, for example in different local geographical areas that are competing for sales in a national retail/wholesale market, might very well eliminate the monopsonistic exploitation that occurs in those local communities and increase competition in the overall food marketing system. A necessary condition for producing such market efficiencies is the establishment of conditions that facilitate NGC formation.

Governance Structure

Although cooperatives have the potential to exploit a number of distinct advantages when compared to other forms of vertically integrated enterprises, their ability to realize these benefits hinges on an effective governance structure. All member-owned organizations face a delicate balancing act in terms of serving the needs of both the members and business. The key to balancing these needs lies in

clearly defining the responsibilities of the board, members, and management. Given the features of NGCs, a number of concerns regarding each of these components in the governance structure of cooperatives is raised.

With reference to members, member control through the principle of one-member, one-vote is arguably precarious for all forms of collective organizations (Zusman 1982). In NGCs, large producers who have invested heavily in the enterprise may feel this policy is unfair. NGCs may, therefore, face increasing pressure to modify voting rules, for example, linking voting power to the number of shares held. On the other hand, NGCs may face less of this type of pressure than large, diversified cooperatives. In comparison to the traditional marketing and supply cooperatives, NGC membership is likely to be less heterogeneous. NGC value-added processing activities are typically limited to one commodity group, and the difference in the value of shares owned by members may be relatively small. The establishment of a common group objective for NGC members is therefore likely to be easier, which in turn minimizes the potential for conflict (Zusman 1982, Fulton 1990).

On the management side, the principal-agent problem, or the alignment of the objectives of an organization's decision makers with those of its owners, has been cited as being especially difficult for cooperative firms (Sexton and Iskow 1988, Fulton 1989, Cook 1994). Cooperative managers sometimes have difficulties in recognizing that the traditional goals of profit and growth may need to be modified in a cooperative firm to ensure member welfare. For NGCs, the importance of appropriate management selection is accentuated by their involvement in value-added processing.

NGCs appear to have been diligent in ensuring that top management has the breadth of technical experience required for successful operation. A number of NGCs have, for example, hired managers and production engineers away from their competitors. However, attention to technical and production details is not sufficient for a cooperative to be run effectively. A number of additional areas outside of technical experience must also be addressed to ensure member needs are kept at the forefront. Cook (1994) identifies a number of areas, such as conflict resolution, resource allocation, and information spokesperson, which are particularly significant for cooperative managers due to the severity of the behavioral consequences associated with them. Cook maintains that, for the long-term sustainability of a cooperative, technical industry skills must be balanced with exceptional communication skills and the ability to develop group cohesiveness. This recommendation is of particular importance to NGCs that have engaged managers who may not be familiar with the organizational structure of cooperative enterprise and may, therefore, require training in this area to ensure that management and member objectives are in tune.

The final component of a cooperatives' governance structure is the elected board members. Board members are often reluctant to provide management with enough freedom to manage processing cooperatives efficiently (Hardesty 1992). Because NGC members have committed relatively large capital outlays to finance the processing facility, this problem may be more pronounced than in more traditional cooperatives, where member investment is not as great. Even more is at stake for NGC members operating in emerging industries, as their dependence on the cooperative processing facilities is likely higher.

Cooperative Development Process

The success and proliferation of NGCs in North Dakota and Minnesota cannot be solely attributed to the organizational features of these new enterprises. Like

agricultural cooperatives formed around the world during previous waves of cooperative development, NGCs rose out of the concerted efforts of a number of key players committed to the growth and development of the rural economy. Given the wide interest in duplicating the successes of the NGC model in the development of other regions, it is important to examine the elements of the cooperative development process that are highlighted by NGCs.

At the core of any form of collective action lies a key group of individuals who recognize they face a common problem or perceived opportunity and are prepared to work cooperatively to address the common goal. However, although common economic or social issues represent necessary conditions for cooperative development, they do not appear to be sufficient conditions. Empirical evidence suggests that cooperative formation also depends on outside institutional support; although there are benefits to collective activity, groups of people find it difficult to coordinate their individual actions to achieve these benefits. While economic and social conditions in rural areas provide the motivation for cooperative formation, the process of forming agricultural cooperatives is aided by outside agents that help future members understand the problems they are facing, provide the cooperative model as a solution to these problems, and assist the new cooperatives in getting established (Fairbairn et al. 1993).

NGCs provide a contemporary example of how cooperative formation requires development assistance. In North Dakota, the process started with the development of a comprehensive and focused state-level rural development strategy, "Growing North Dakota." This strategy established an infrastructure and a network of support that provided the resources critical to the development of new enterprises, both cooperative and investor owned. The North Dakota Associations of Rural Telephone and Electric Cooperatives and the cooperative banks have also been instrumental in the growth of NGCs. The Rural Telephone and Electric Cooperatives have provided funding for a development officer who works with producer groups to identify either problems or opportunities they face and aids in accessing development resources, such as funds for feasibility studies or technical experts. The cooperative banks and other financial institutions have provided technical expertise as well as a source of capital for both members and the new cooperatives. Government and other public and quasi-public agencies have not driven NGC formation, but have played important roles by advocating and supporting projects and removing some of the barriers to new enterprise development—for example, by making funds available for feasibility studies (The North Dakota Associations of Rural Telephone and Electric Cooperatives 1995).

Within this network of support, facilitators of NGC start-ups emphasize three critical components that feature in the development process: feasibility studies, business/marketing plans, and the equity drive. Although none of these components are new or unique, their importance in the formation and success of NGCs cannot be underestimated. The willingness for producers to fund and heed the results of a professional feasibility study is a prerequisite to tapping into resources provided by the support network outlined above. In many cases, government funding and low-interest loans have been secured to finance the commissioning of feasibility studies. In other instances, funds are raised through the purchase of options to buy shares in proposed NGCs.

Once a feasible business opportunity has been identified, a comprehensive business and marketing plan is developed. The business plan outlines the proposed

strategy to produce and market the final processed products and outlines the capital required to finance the venture. The NGC marketing strategy focuses on the need for professional management, advertising, and market research that reflects the value-added focus of the proposed cooperative. The fundamentals of the business plan are developed into a prospectus used in the drive to sign up investor-members. The equity drive is a crucial step; if sufficient capital (approximately 30 percent) cannot be raised through the sale of delivery shares, the proposal is usually not considered further.

Conclusion

The growth of selected membership, value-added processing cooperatives in the North Dakota and Minnesota region has sparked considerable interest in cooperatives as development tools. New Generation Cooperatives (NGCs) are being formed to engage in value-added processing activities; this focus differentiates them from earlier generations of cooperatives formed in the region primarily to market commodities and supply inputs. A key distinguishing feature of the NGC organizational structure lies in its use of transferable delivery rights, which are directly tied to members' equity contributions to the cooperative.

The success of NGCs in promoting development in the region and the unique combination of organizational elements present in NGCs have generated substantial interest in the use of these cooperatives as models for agricultural, cooperative, and rural development. In particular, NGCs have highlighted three major themes in cooperative theory: (1) incentive structures; (2) governance structures; and (3) the cooperative development process. The purpose of this paper was to describe NGCs and to position them in the context of this theory and to use NGCs as a lens through which important elements of this theory can be understood and reviewed.

The NGC delivery right system not only ties member patronage to member investment, but also creates incentives for members that allow NGCs to address the free rider and horizon problems that have long been associated with cooperatives. At the same time, however, the NGC structure may limit the ability of all producers within a region to benefit from the presence of the cooperative.

By enabling agricultural producers to integrate to the processing level, NGCs provide producers with a greater share of the consumer food dollar. As such, NGCs may offer an alternative to marketing channels that are oligopolistic in nature. Integration can also increase margins available to producers by allowing for greater coordination of market information regarding product characteristics or by enabling members to exploit production knowledge at the farm level. These factors are particularly important for newly emerging and niche markets.

By virtue of their organizational structure, NGCs thus appear to have a number of advantages relative to other forms of cooperative structures. However, NGCs also face a number of potential obstacles, particularly in the maintenance of an effective governance structure. Although these obstacles are potential problems in all cooperatives, they may be amplified in NGCs. Given the high financial stake members have in an NGC, producers may exert undue influence over management decisions or they may pressure the NGC to tie voting rights with delivery rights. The willingness of management to develop the non-technical skills demanded by cooperative organizations will be a determinant in the long-term success of NGCs.

The NGC organizational structure has a number of repercussions on producers not involved in the start-up of the cooperative. The selected membership struc-

ture limits the NGC's ability to act as a competitive yardstick. Tradable delivery rights may mean that, although original members can obtain windfall gains by selling their shares, subsequent members are limited to receiving a competitive price for their product plus any growth or fall in the value of the shares they purchase. Some producers may also have difficulty raising the capital required to purchase NGC shares.

Finally, the rapid rise of NGCs in Minnesota and North Dakota cannot be fully explained by the presence of economic conditions conducive to their formation. As has been the case for cooperative development in almost every country and at every point in time, support by development agents and other external institutions appears to be a necessary condition for NGC formation and growth. The network of support developed by existing cooperatives, financial institutions, and government representatives in the region deserves considerable attention by people interested in duplicating "co-op fever" in other areas.

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