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**The South Dakota Soybean Processors Cooperative:
Socioeconomic Impacts**

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The South Dakota Soybean Processors Cooperative: Socioeconomic Impacts¹

In the last half-century, agriculture and rural communities have undergone a series of changes, the pace of which has accelerated in recent years. These changes have been attributed to a number of forces, including changes in consumer preferences led by demographic shifts, increased global competition forcing a continuous drive towards efficiency improvements, attempts—albeit erratic ones—to shift government policies away from agriculture and towards rural areas in general, and changes in technology (Barr, 1998; Senauer, Asp, and Kinsey, 1991, pp.1-12; Saxowsky and Duncan, 1998). Many of these changes in agriculture and rural communities accelerated in times of economic difficulties such in the 1980s (Cobia, 1997; Diersen, Janssen, and Loewe, 2000; Murdock and Leistritz, 1988; and Stefanson and Fulton, 1997). The result of these ongoing changes is a move to an industrialized supply system driven by consumer demand in which production agriculture is but a link in the chain.

In spite, or perhaps because, of these changes many rural communities in general and agriculture dependent areas in particular have not shared in the decade-long economic boom of the nation as a whole. Nationally, most rural communities have decreased their dependence upon agriculture as the main driver of economic activity, thereby becoming more economically diverse. Nevertheless, many rural communities continue to experience a “vicious circle” of population loss due to the lack of employment opportunities on the one hand and, on the other hand, insufficient investments by manufacturers because they cannot find workers (McGranahan, 1998; and Rathge and Highman, 1998).

To counteract the forces of economic decline in rural areas, various rural development policies have been applied. One rural development tool is to encourage rural citizen to become involved in cooperatives. Cooperatives in general, and agricultural cooperatives in particular have long been viewed as a useful instrument of rural economic development, because they are grounded in the region they serve and generally do not have incentives to relocate after their

¹ We would like to thank F. Larry Leistritz and Randall S. Sell for letting us use and adapt their survey instrument and for providing helpful suggestions.

initial establishment. Also, cooperative profits tend to stay within the local economy (Stafford, 1990; and Ziewacz; 1994).

In recent years, many agricultural cooperatives have had to make organizational adjustments in response to the aforementioned structural changes affecting their membership and rural citizens at large. Changes in the structure and organization of cooperatives have contributed to the development of “New Generation Cooperatives” (NGCs), which in recent years have become an increasingly popular cooperative form among farmers wishing to enhance their profits by engaging in economic activities that traditionally take place off the farm. These cooperatives are distinguished from their traditional counterparts in that they generally engage in value-added processing activities that involve a contractual association between the cooperatives and their members. The contract specifies that members obtain the right to deliver one unit of raw product for each share purchased. A further characteristic of NGCs is that their membership is restricted to only those agricultural producers who agreed to invest in the cooperative at the time of its inception and others with delivery rights. Further, NGC capital acquired by up-front member investment is semi-transferable at market value. Other features that distinguish NGCs from traditional cooperatives are described in Stefanson and Fulton (1997); and Trechter (2000).

NGCs’ focus on capturing an increased share of consumer expenditures for the benefit of their farmer-members makes these cooperatives particularly useful as a rural development tool, not only because potential profits accrue directly to member-farmers, but processing raw agricultural commodities generates additional economic activities for the benefit of rural communities. Hence, the economic benefits of NGCs to both agriculture and rural communities are generally thought to outweigh their costs, although the research to back up this assertion is somewhat limited. A recently completed study on the economic impacts of four new generation cooperatives in North Dakota showed that each of the cooperatives made positive contributions to their local economies by improving job opportunities and wages, as well as stabilizing local real estate markets (Leistritz and Sell, 2000). Another recently published study detailed the

impacts of five Midwest cooperatives and found that each of the five cooperatives examined affected their economies in positive ways (U.S. Department of Agriculture, 2000).

While many NGCs provide direct and indirect benefits to local communities, some have experienced difficulties, stemming from management problems, marketing failures, and equity difficulties. Also, the introduction of NGCs into rural areas has been associated with social and demographic shifts in local communities. Leistritz and Sell (2000) found that newly formed cooperatives may be unable to satisfy their demand for labor within the communities in which they are located, or that the cooperatives require jobs that are not well liked by local citizens. The resulting immigration—often by individuals with different racial/ethnic backgrounds from those of local citizens already living in these communities—may lead to social disruptions within local communities.

This paper attempts to further the existing work on the impacts of NGCs on their communities by reporting on research conducted on the social and economic benefits and costs associated with the establishment of the South Dakota Soybean Processors (SDSP) cooperative in Volga, South Dakota. This research is a follow-up of, and provides a more in-depth analysis than an earlier study by Van der Sluis, Goreham, and Zeuli (2000). The SDSP cooperative is a particularly interesting NGC example, because it is relatively new—having begun operation in late 1996, so the memories of those who helped form the cooperative and were affected by it are still fresh, and success factors of the cooperative are easily identified. The cooperative's recent establishment also enables an accurate documentation of the economic and social impacts of the cooperative. Further, SDSP's short track record is largely determined by market conditions and not tied to federal policies to the same extent as some other NGCs. This is in contrast to those value-added agricultural operations involved in ethanol production, which is intimately tied to the continuation of Federal tax credits for ethanol and methanol producers.

The purpose of this paper is to gauge the socioeconomic impacts of the SDSP plant on the region in which it is located and to provide community, state, and national leaders with insights on areas that need to be addressed when establishing new generation cooperatives. Specifically,

the two main objectives are to (1) document the economic conditions needed for the successful establishment and operation of a processing cooperative; and (2) assess local resident perceptions of the social and economic impacts of the SDSP cooperative on the Volga community.

The paper consists of two main components. First, it reports on an informal, but in-depth survey of a small number of selected community leaders from the Volga area—in which the SDSP plant is located. The purpose of this survey was to create an accurate representation of the community, the effects of the SDSP plant, conditions helping or hindering the effects of the plant, and the community's perception of the plant. The community leaders that were polled were chosen on the basis of their roles in business and community organizations, or because of their elected or appointed governmental positions. The community leader survey instrument was based on a questionnaire developed by Leistritz and Sell (1999a). The first part of the paper also reports basic financial and workforce data, based on annual reports and interviews conducted with individuals directly involved with the plant.

The second component of the paper reports on a survey administered to a random sample of citizens living in Volga and its surrounding community, Bruce. This survey was conducted by mail, using the “total design method” developed by Salant and Dillman (1994). The community survey instrument, based on a questionnaire developed by Leistritz and Sell (1999b), sought to obtain information from local residents on the degree of satisfaction with their community and on residents' perceptions of the effects of the agricultural processing plant on their community. The reported information is based on 96 usable responses, yielding a response rate of 68 percent.

Background on the South Dakota Soybean Processors Cooperative

The SDSP cooperative was formed in response to a combination of factors. First, in the early 1990s, farmers in the region faced relatively low prices for small grains and experienced poor harvests as a result of inclement weather. Second, soybean varieties were introduced that were suitable for northern U.S. climates, leading to major increases in South Dakota's soybean

production. This has been documented by Diersen, Janssen, and Loewe (2000), who reported that soybean acres increase five-fold between 1978 and 1992. Third, prior to the establishment of the SDSP facility, there was a substantial difference between the price of raw soybeans and that of soy meal. Low soybean prices in the region were caused by large shipping costs to population centers and harbors with access to international markets, and high soy meal prices were associated with transporting processed soy meal from soybean crushing plant locations back into the state.

In response to these changing conditions, the South Dakota Soybean Research and Promotion Council sponsored a study that assessed the feasibility of establishing a soybean processing plant in South Dakota in late 1992. The results of the study indicated that a profitable soybean processing plant could be built in South Dakota, which induced a group of farmers to incorporate as the South Dakota Soybean Processors cooperative and to implement the establishment of a \$32.5 million processing facility plant at its current site. Besides being near to the cooperative's investors and meeting physical conditions for building a large processing facility, the site was chosen because it is located along major highway transportation routes and also along a track of the Dakota, Minnesota, and Eastern Railroad, which travels directly to one of the area's largest refiners of soybean oil in Mankato, Minnesota. Further, SDSP's decision to locate its processing facility at the Volga site may also have been influenced by a community tax incentive.²

The SDSP processing facility started operating in September 1996. At the time of construction, the SDSP plant was the nation's first soybean crushing plant built since 1978 and it remains the only soybean processing plant in South Dakota. Currently, the cooperative has close to 2,100 members who are located mainly in western Minnesota and eastern South Dakota. The cooperative employs 57 full-time workers and 15 part-time workers and has an annual payroll of

² The five-year tax incentive entails paying property taxes on only 25 percent of the plant's total value in the first year, on 50 percent in the second and third years, on 75 percent of its total value in the fourth and fifth years. The facility will be fully taxed in the sixth year.

\$2 million. In 1999, SDSP's total assets were \$48.4 million and members held \$29.2 million in equity in the plant. In 1998, the cooperative's net proceeds were \$4.6 million, of which 74 percent was paid in cash to its members, while 17 percent and 13 percent was retained by the cooperative in cash and equity patronage, respectively. In 1999, the plant processed 24.2 million bushels of soybeans, yielding 539,456 tons of soy meal, 134,998 tons of soy oil, and 35,136 tons of soy hulls, representing an increase of 11 percent over its 1998 level. The processing capacity of the plant was expanded from 50,000 to 65,000 bushels of soybeans per day in the first six months of its operation, followed by additional expansions to 70,000 bushels of soybeans per day in 1998 and to 80,000 bushels of soybeans per day in 1999.

Regional Characteristics

The city of Volga is located approximately 30 miles from the Minnesota border in east central South Dakota. The town is located in Brookings County, classified by Butler and Beale (1993); and Butler (1990) as a nonmetropolitan county not adjacent to a metropolitan area. Census figures indicate that the county had a total population of 25,931 in 1999, making it the fourth most populous in the State. In 1998, Volga had a population of 1,296 (U.S. Department of Commerce, 1999).

In 1998, the largest industries in the county were state and local government and durable goods manufacturing, each accounting for about one-quarter of the county's total earnings. Further, the services, farming, and retail trade sectors accounted for 11, eight, and six percent of the county's total earnings, respectively. Further characteristics of the community are described in Van der Sluis, Goreham, and Zeuli (2000).

Community Leaders Views of SDSP

Participants in the community leader survey identified the introduction of SDSP into the Volga area as economically very import to the community. The five community leaders agreed that SDSP's most important benefits to the community were the direct and indirect employment

opportunities created by the cooperative. The leaders also indicated that soybean price increases provided important benefits to local farmers. Further, infrastructure improvements and a new truck stop and café were identified as important community benefits as a result of the cooperative's decision to locate in the Volga area. On the other hand, the increased truck traffic associated with the plant was viewed as a source of contention. While much of the infrastructure might also have improved in the absence of the SDSP cooperative, one of the community leaders indicated that the SDSP plant probably hastened this process. Further, it was noted that the introduction of the plant had indirectly helped enable improvements and expansions to other public and private facilities in the town.

The community leaders surveyed stated that the introduction of the cooperative provided a positive impact on the region's real estate market, but that school enrollments remained virtually unchanged. Nevertheless, the processing facility was viewed as having a positive impact on the school system by adding to the county's tax base.

While the community leaders indicated that social interactions among community members had remained unchanged, they expressed some concern over new residents moving into the area, although little change in the use of social services has been reported. The leaders also viewed crime and public safety levels, as well as the use of police services as having remained unchanged. The community leaders also stated that the community received additional benefits from the cooperative, because its volunteer fire department received a financial donation from SDSP and the cooperative worked closely with local fire departments.

The local leaders did not view the impact of the cooperative on the quality of the environment as major concern, and noted that the cooperative implemented environmental safeguard measures. They further indicated that public utilities such as water and sewer were positively affected by the introduction of the cooperative into the community, because a new substation was built close to the plant and the city's water and sewer system were upgraded.

The community leaders indicated that a number of lessons were learned from their experience with the entry and ongoing presence of a value-added agricultural enterprise in their

community. The leaders stated that communities need unbiased information on the environmental and economic impacts of the processing facility and on whether the project is expected to provide social and economic benefits to an area. In their view, this type of information should be provided by state economic development agencies, local job service agencies, farm organizations, and universities.

Based on their experience with the SDSP cooperative, the community leaders offered several suggestions for other communities that consider attracting value-added agricultural processing facilities. First, the organization proposing the development of the facility should provide honest information to all parties involved with the project. Also, the organization should conduct a high quality feasibility study before negotiating with community leaders, have a credible business plan to present to the public, and hire superior-quality management. The community leaders also stated that projects must be sufficiently financed so as to prepare for large project expenses – particularly in its first year of operation – and that organizers should be prepared to invest considerable time in the project. Finally, the leaders suggested that communities may be able to enhance local and regional support for proposed projects by working closely with neighboring areas.

Survey of Study Community Residents

The results of the community residents survey provide insight in local citizens' perceptions of social, economic, and environmental effects of SDSP on the community. The random sample of community residents was constructed from a telephone directory of Volga and the nearby community of Bruce, South Dakota. Respondents were fairly evenly distributed over adult age categories. Despite rules for survey respondents to avoid over-representation of demographic groups of the Total Design Method (Salant and Dillman, 1994), 65 percent of the respondents were male. Also, 72 percent of the respondents were married, 44 percent indicated having received a high school education or less, and 32 percent reported having at least a college degree. Further, 24 percent of the respondents indicated being retired, 58 percent were employed

by others, and 17 percent were self-employed. Eighteen percent of the respondents reported being employed in agriculture, 14 percent in manufacturing, and 13 percent were employed in the services sector. The representation of the remaining sectors among the respondents was ten percent or less. Further, more than three-quarters of the respondents indicated owning their residence, and 22 percent of the respondents stated that they owned and/or operated a farm or a ranch.

Before soliciting community residents' perceptions regarding the cooperative, the individuals were asked to state their degree of satisfaction with the provision of local public services, their environment, and socioeconomic opportunities in the region. The respondents' outlook towards local public services provision was generally very positive—more than 50 percent of the respondents indicated being very or somewhat satisfied with individual public services and the environment, including fire protection, quality of the natural environment, law enforcement, housing, utilities, public schools, streets and roads, medical services, and recreation facilities and opportunities. On the other hand, less than 50 percent of the respondents expressed being very to somewhat satisfied with local opportunities to earn an adequate income, childcare and/or daycare provision, and employment opportunities to keep youth in area. The survey respondents expressed particular discontent with the latter category—45 percent of the respondents indicated being very to somewhat dissatisfied with employment opportunities to keep youth in area.

Virtually all respondents of the community resident survey indicated that they knew where the plant was located, and 41 percent declared having visited the facility, suggesting a considerable degree of familiarity with the facility among the sample of respondents. One percent of the respondents indicated working for SDSP and five percent marked that they had a family member who worked for the plant. Close to 19 percent declared owning or working for a business that supplied SDSP. Further, close to three-fourths of the respondents indicated that they lived within five miles, 20 percent between six and ten miles, and six percent over ten miles from the plant.

The community residents were also asked about their involvement in activities related to the development of SDSP. About 24 percent of the respondents reported having attended one or more meetings or hearings about the plant and ten percent had contacted company officials. These responses suggest a relatively high degree of familiarity with the plant among community residents. Nevertheless, very few respondents (two percent) reported having contacted government officials or signed a petition (six percent) concerning the plant.

Before eliciting community residents' specific views on the impacts of the SDSP processing plant, a baseline of the respondents' attitudes regarding agricultural processing plants in general was derived from the survey. Overall, 85 percent of the respondents somewhat or strongly agreed that agricultural processing plants in general provide economic benefits to the community. In addition, 68 percent of the individuals agreed that the presence of agricultural processing plants encourages other industries to locate in the community in which they are located, and 57 percent of the respondents agreed that these facilities increase a sense of well-being and community pride among local residents. On the negative side, more than one-fourth of the respondents stated that the processing plants help decrease property values, and a slightly smaller number of respondents stated that agricultural processing plants cause environmental contamination.

Table 1 lists the community residents' beliefs regarding SDSP. The table shows that 73 percent of the respondents agreed that the economic impacts of the SDSP plant were positive, and 53 percent agreed that its social impacts were positive. On the other hand, less than half of the resident (45 percent) agreed that company officials had put out complete and accurate information about potential local impacts before the plant's construction. Only 31 percent of the respondents indicated that state government officials had provided complete and accurate information about potential local impacts. Further, the 42 percent of the residents agreed that operating workers were area residents, while only nine percent agreed that construction workers were area residents.

Table 2 lists the community residents' views on both positive and negative effects of SDSP on individual local services. Close to three-fourths of the respondents indicated that job opportunities had been positively impacted. More than 50 percent of the respondents indicated that SDSP's effect on resident incomes, on local public revenues, as well as on streets, roads and highways had been positive to very positive. Further, more than 30 percent of the respondents viewed the impact of SDSP on their quality of life; schools; and fire protection as positive or very positive.

On the negative side, 37 percent of the respondents indicated that SDSP had a negative or very negative impact on the air quality. Also, some respondents indicated that housing costs; street, roads, and highways; water quality; as well as local public expenditures had been negatively or very negatively affected by SDSP, varying from a high of 17 percent to a low of 12 percent of the respondents.

Table 3 provides an overall assessment of the opinions among the sample of the community residents regarding the SDSP plant. The table shows that 70 percent of the respondents stated that the economic benefits of SDSP exceeded its costs, and over 80 percent indicated that the plant's social benefits exceeded its costs to the community. Finally, 74 percent of the respondents agreed with the statement that if an election were held, most people in their community would vote in favor of SDSP, while 77 percent of the respondents indicated that they themselves would vote for the development of SDSP if an election were held.

Summary and Conclusions

This paper reports on two surveys held in the east-central South Dakota communities of Volga and Bruce. The purposes of the surveys were to (1) assess the conditions prior to the establishment of a soybean crushing facility operated by the South Dakota Soybean a processing cooperative; and (2) elicit local residents' perceptions of the social and economic impacts of the cooperative on the local area. The first survey was held among a very small group of local community leaders, selected on the basis of their local leadership experience. This informal

survey was meant to provide background information on the Volga-Bruce communities beyond that obtained from standard secondary data sources, and it also facilitated in conducting the second survey. The latter survey was held among a randomly selected sample of Volga-Bruce community residents.

While the results of the survey of community leaders do not lend themselves to statistical interpretation due to the participating group's limited size, the information derived from the individuals' responses provides useful background knowledge on the community and the conditions leading up to the establishment and operation of the cooperative. One outcome of the responses by community leaders is that communities and individuals affected by these projects need unbiased information on the environmental, social, and economic impacts of potential processing facilities on their community. The community leaders also stressed that information provided to those affected by such projects must include a credible feasibility study and a business plan before project organizers negotiate with community leaders. Further, the leaders stressed the importance of hiring management with solid qualifications, the need for adequate financing, and that organizers should be prepared to invest large amounts of time in their planned project. Finally, the leaders suggested that the chances for successfully developing potential projects may be enhanced if local community leaders cooperate with their counterparts in neighboring areas.

The results of the survey of community residents showed that there is a high degree of familiarity with the facility among the sample of respondents, illustrated by the fact that more than two-fifths of the respondents indicated having visited the soybean crushing plant. Regarding impacts, respondents indicated that the economic as well as the social effects of SDSP had been positive. More specifically, the respondents indicated that SDSP's impact on most local services had also been positive. A notable exception in the view of the respondents was the impact of SDSP on air quality, which was viewed as having been negatively affected by the cooperative. Moreover, the community residents expressed some dissatisfaction with the completeness and accuracy of information that had been put forth by state and local officials, as well as by the

cooperative itself. This sentiment is in correspondence with the results of the community leader survey, which also suggests that local residents and their leaders require the availability of and access to unbiased information so as to make informed decisions.

While the limited scope of this study does not lend itself to global policy extrapolations regarding agricultural processing operations, the research has some important implications. The study shows that important drivers of the economic success of NGCs are leadership capabilities, including an ability among cooperative leaders to provide a vision regarding the future role of their organization. Further, an important condition for the successful development and operation of a new agricultural processing venture is that project leaders demonstrate a willingness to cooperate with local leaders and citizens by providing substantive information to the public regarding their project plan and its various impacts. Also, firm commitments of, and cooperation among producer-members and community leaders are needed for developing and operating a viable operation.

Agriculture and rural communities are currently in a state of flux. The results of this study illustrate that NCGs can be used as a workable tool for agricultural and rural community development. The study also indicates that the chance of successfully developing a cooperatively owned processing operation will be enhanced if agricultural project leaders work in close collaboration with community leaders. Further, the results of this study show that there is a great demand among rural citizens and their leaders for unbiased information concerning the potential social and economic impacts of such operations.

Table 1. Community Residents Opinions about Circumstances of SDSP, Summary of Five Answer Categories--Strongly Disagree; Somewhat Disagree; Neutral; Somewhat Agree; and Strongly Agree

Item	Somewhat or Strongly Disagree (percent)	Somewhat or Strongly Agree (percent)
Economic impacts of the plant are positive	9.3	73.2
Social impacts of the plant are positive	13.4	52.6
Company officials provided complete and accurate information about potential local impacts	15.4	45.3
Operating workers are area residents	19.6	42.3
State government officials provided complete and accurate information about potential local impacts	16.5	30.9
Construction workers were area residents	49.5	9.3

Table 2. Community Residents' Assessment of Positive and Negative Impacts of SDSP,
Summary of Five Answer Categories—Very Negative; Negative, Neutral, Positive; and
Very Positive

Item	Negative / Very Negative (percent)	Positive / Very Positive (percent)
Job opportunities	5.1	73.2
Residents' incomes	4.1	56.7
Local public revenues	3.1	52.6
Streets, roads, and highways	14.5	50.5
Quality of life	4.1	35.1
Schools	1.0	34.1
Fire protection	2.1	34.0
Local public expenditures	12.3	27.8
Family life	5.2	25.7
Housing costs	16.5	20.6
Social organizations (churches, civic groups, etc.)	1.0	20.6
Police protection	5.1	14.4
Water quality	13.4	13.4
Crime/public safety	9.3	11.3
Childcare/daycare	5.2	10.3
Air quality	37.1	10.3

Table 3. Community Resident Assessment of Costs and Benefits of SDSP

Item	Response (Percent)
Economic benefits to community exceeded costs(yes/no)	70.1
Social benefits to community exceeded costs (yes/no)	80.4
If an election were held, most people would vote in favor of SDSP (Somewhat or strongly agree)	74.2
If an election were held, would vote in favor of SDSP: (Somewhat or strongly agree)	77.4

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