
New Generation Cooperatives: *Case Studies*

South Dakota Soybean Processors

by Rodney J. Fink



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Abstract: South Dakota Soybean Processors, Inc., of Volga, South Dakota, has successfully united more than 2,100 producers to provide the funds and management direction to initiate a successful cooperative. Producers from Iowa, Minnesota, North Dakota, and South Dakota provided more than \$21 million to build the first soybean crushing facility in the U.S. since 1978. Initial crush was projected to be 16 million bushels per year, and the crush has increased to a capability of 27 million bushels per year. After three years of operation, the soybean basis for the region has improved by about \$.25 per bushel (for all producers), and SDSP has paid member-owners \$9.2 million in cash patronage. As a result of SDSP, economic activity in the region has increased by at least \$175 million.

South Dakota Soybean Processors, Inc., a new generation value-added cooperative, is owned by 2,103 producers who live in Iowa, Minnesota, North Dakota, and South Dakota. The mission statement of South Dakota Soybean Processors (SDSP) is as follows:

South Dakota Soybean Processors is a value-added cooperative of agricultural producers with emphasis on adding value to soybeans. Our goal is to be financially strong and make a maximum value-added payment to our members while maintaining growth and stock value. South Dakota Soybean Processors will maintain a competitive position in the marketplace by providing quality products to our customers with highly efficient and cost-effective processes.

South Dakota Soybean Processors will ensure success through teams of dedicated and competent directors and associates. We will seek to meet the needs of our members in a friendly and professional manner, and to listen to suggestions from members, associates, and customers.

Background Information

SDSP is located in east central South Dakota in the town of Volga in Brookings County, about 30 miles from the Minnesota border. According to the U.S. Bureau of the Census, Volga had a population of 1,263 in 1990. By 1996, the population was estimated at 1,316, and the population is assumed to have grown since that time. Brookings, the county seat of Brookings County (fourth most populous county in South Dakota) is located eight miles east of Volga. The 1997 estimated population of Brookings County was 26,186. The 1996 per capita income in Brookings County was \$18,939, or 91 percent of the state's average per capita income of \$20,436 and 78 percent of the national per capita personal income average of \$24,436 (U.S.

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Bureau of the Census 1998). South Dakota State University is located in Brookings and is a major employer in the region. The region served by SDSP consists of grain and livestock farmers, with the main crops being corn, soybeans, wheat, oats, and alfalfa. Membership in SDSP is primarily family farms, although some local elevators and Hutterite communities have membership and equity units of participation. The Hutterite communities also purchase significant amounts of meal for their livestock operations.

Planning for the co-op started in 1992 when a feasibility study was sponsored by the South Dakota Soybean Research and Promotion Council. Organizers first tried to attract a processor to build a plant in the region, without success. After some thought, organizers said “Why don’t we do it ourselves?” The study suggested that such a plant would be a good investment, and this led to 15 meetings of farmers throughout South Dakota in early 1993.

In late 1993, a group of soybean producers, acting as incorporators, established South Dakota Soybean Processors. This group, serving as the initial board of directors, updated the feasibility study, and proceeded to plan for the building and operation of a soybean processing plant in South Dakota. Four sites were proposed for the facility, and the board voted in November 1994 to build the \$32.5 million dollar plant in Volga, South Dakota. Ground breaking ceremonies were held on August 21, 1995, and this signified the nation’s first new soybean crushing plant to be built since 1978.

The early stages of organization required a great deal of effort. The nearby Minnesota Corn Processors found their new generation cooperative (NGC) to be a good investment, and this success made fundraising easier. The current SDSP board president and other organizers traveled to almost 200 meetings, often two or three per day, and met with at least 6,000 producers. They often started out at 6:00 A.M. and returned after midnight. The current president recalls that within a 36-hour time period, he received 120 phone messages. He reported his cellular phone bill reached \$435 during one month.

During the plant planning stages, the state’s soybeans (about 90 million bushels) were shipped out of state for processing. About 40 percent were shipped back for feed. The state’s soybeans were sold to processors in Iowa, Minnesota, Nebraska, and other neighboring states. By building a plant, farmers hoped to gain in several ways. With lower shipping costs, prices would be higher for soybeans because the market is local, and farmers could purchase soybean meal without paying the added freight charges. Since crushing commenced in late 1996, the basis for soybeans has narrowed by about \$.25 per bushel, and the production of soybeans in the state has increased to about 130 million bushels. Initial crush output was estimated to be 16 million bushels per year but has increased to approximately 27 million bushels per year. Plant promoters banked on a growing domestic and worldwide demand for soybean products. More than one-half of U.S. soybean production is crushed, while roughly one-third is exported. Planners pointed to an increased demand by China and the possible use of soy fuel, a clean burning fuel, for mass transit equipment.

The component of a bushel of soybeans contains approximately 11 pounds of oil and 48 pounds of protein-rich meal. Food ingredients are the primary end use for oil, while meal is

consumed mostly by animals. Soybean oil dominates the edible portion of U.S. consumption of fat and oil as nearly all soybean oil is used in a food application. More than 82 percent of edible consumption of fats and oils in the U.S. is through soybeans (followed by oils of corn, tallow, rapeseed, lard, coconut, and peanuts). Of the U.S. soybean oil consumption, salad/cooking accounts for 38 percent, baking/frying for 45 percent, and margarine for 14 percent. Of the soybean meal used domestically, nearly all is used in livestock and poultry feed, with poultry and swine clearly dominating usage (poultry, 52 percent; swine, 29 percent).

Soybean Processing Alternatives

Soybean processing depends on the market availability, the price of product (oil and meal), and meal quality. Three general types of soybean processing plants are in use, and each provides various alternatives for processing. In order to maintain genetic purity from identity-preserved soybeans, interest has been expressed in the smaller units using extruder/expeller technology. Van Dyne and Blase (1998), in a study of marketing implications for biotechnologically engineered, identity-preserved soybeans, evaluated three different sizes of processing technology:

1. *Extruder/Expeller technology* – is a small-scale plant generally used in conjunction with a feed mill. The volume of these plants is generally small, often less than one million bushels per year.
2. *Preheat steam/Expeller technology* – relies on steam preheating of the soybeans followed by the use of expellers to separate the oil and meal fractions. These plants are intermediate-size plants generally used to extract oil from six to 12 million bushels per year. The capacity is easily expanded by adding an additional expeller to the system. A single expeller can be assigned to process a unique product such as an identity-preserved soybean, if desired.
3. *Conventional Hexane plant* – uses a chemical (Hexane) extraction. This is clearly the largest facility of the three. Such plants have the advantages of economy of scale and the ability to remove all but about 1 percent of the oil from the soybeans. Typically, the per unit value of oil is about twice the per unit value of meal. The average annual crush of such plants in the U.S. is about 27 million bushels per year. The SDSP plant is a chemical extraction plant and although the initial crush estimates were for 16 million bushels per year, the crush is now approaching 27 million bushels per year.

The first two plants are usually added to an existing feed mill, while the larger plant is a stand-alone plant. With many extruder/exceller plants, the meal volume is small enough that it may be consumed in the local area; only the oil needs to be shipped. The characteristics of the three plant sizes are described in **Table 1**.

Table 1. Characteristics of Three Soy Processing Plants

<i>Characteristics</i>	<i>Extruder/Expeller</i>	<i>Steam/Expeller</i>	<i>Hexane</i>
Volume of soybeans processed (bu/yr)	572,000	6,000,000	16,000,000
Volume of meal produced	14,814	149,700	380,800
Capital investment (Investment estimated in 1997)	499,370	10,000,000	32,750,000

Source: Van Dyne and Blase 1998.

Van Dyne and Blase (1998) projected operating costs for the three selected operations and determined costs of operation (i.e., utilities, maintenance, labor, administration and interest on capital) per bushel processed to be as follows: extruder/expeller plant, \$0.52; steam/expeller plant, \$0.38; and Hexane plant, \$0.44. The smaller expeller plants are often affiliated with an existing feed and grain elevator, so some of the infrastructure costs are shared costs. The expeller plants do not remove all of the oil from the soybeans, so in order for them to be competitive, they must receive a premium for their meal (which retains some of the residual oil). The output fractions of a bushel of soybeans from the alternative processing plants are shown in **Table 2**.

Table 2. Output Fractions from a Bushel of Soybeans from Alternative Processing Plants

<i>Component</i>	<i>Extruder/Expeller</i>	<i>Steam/Expeller</i>	<i>Hexane</i>
Total meal (pounds)	51.8	49.9	47.6
High-oil meal (pounds)	51.8	49.9	–
Hulls (pounds)	–	–	2.0
Oil (pounds)	7.3	9.0	11.1
Moisture evaporated	0.9	1.1	1.3
Totals	60	60	60

Source: Van Dyne and Blase 1998.

The expeller operations capture less oil per bushel of soybeans to market and, in order to be profitable, must receive a higher price for the high-oil meal. The actual price received by firms marketing high-oil meal varies and tends to range from zero to \$30 per ton, relative to 44 percent protein meal. The SDSP operation was designed to process a large quantity of soybeans and to receive the best possible price for the products. The selection of the Hexane plant was an appropriate decision to meet SDSP's needs and expectations. In any plant selection process, the group of producers should first decide what they want to accomplish, establish firm goals and objectives, and then select the processing system that can accomplish their desired goals and objectives.

Soybean Crush Margins

The gross crush margin is an important factor in estimating plant profitability in current plant processing systems. The gross margin is the total receipts of product and coproduct sales

minus the cost of purchasing the soybean feedstock. Thus, the gross margin includes all costs of processing the soybeans into a product and coproducts, the return on investment, the risk, normal profits, plus other factors. Gross profit does not remain constant over time and is estimated monthly by the federal government. Factors influencing gross margins are a carryover of soybean supplies, production, level of competition, domestic and international demand, and other factors. Between September 1986 and May 1997, about 70 percent of the monthly gross margins occurred in the \$0.71 to \$1.10 ranges; however, the range during this period was from a low in the \$.40 per bushel range to one occurrence in the \$1.70 range. The gross margin from the Chicago Board of Trade for 1998 and 1999 is shown in **Table 3**.

Table 3. Average Chicago Board of Trade Soybean Crush margins

<i>Months of Year</i>	<i>Crush Margin for Harvest Year 1998 (1997-1998)</i>	<i>Crush Margin for Harvest Year 1999 (1998-1999)</i>
September	\$0.70	\$0.33
October	0.72	0.31
November	0.68	0.21
December	0.51	0.24
January	0.34	0.19
February	0.30	0.18
March	0.19	0.18
April	0.12	0.22
May	0.16	0.21
June	0.09	0.21
July	0.17	0.26
August	0.39	0.20
Average	0.36	0.23

Source: SDSP 1999.

Average crush margins reached a 20-year low in 1999 averaging only \$.23 per bushel compared with \$.36 in 1998. To maximize profits, a processor must establish positions when the margin is wide (such as in September through November of 1998) to maximize profits. When soybeans are plentiful, such as during harvest, soybeans are relatively cheap; oil and meal prices usually are not so variable, and the margins tend to widen during this period. This was quite true in 1998; however in 1999, the margin remained flat throughout the processing year. When soybean supplies are tight, farm gate prices are driven up. Even though meal prices are also driven up, the overall processing margin normally decreases. This is a typical scenario during the summer and fall prior to the soybean harvest. The 1998 soybean harvest showed that crushing margins do not always follow such a scenario. SDSP maintains deposits with a brokerage firm which are used for risk management—that is, they use futures and options contracts to manage the commodity price volatility risk of soybeans, oil, and meal.

SDSP Beginnings

Following incorporation, SDSP was authorized to sell up to 2,500 shares of common stock and 80,000 shares of preferred stock. Each voting member is required to purchase one share of common stock, and only the common stock was offered for sale. At least 85 percent of the voting shares must be owned by farmers, and this includes landlords and tenants who receive as rent a portion of the products produced on the land (not to include timber or forest products). Each member must buy one share of common stock.

The SDSP is a closed co-op—one in which no new member-owners will be admitted other than by transfer of existing shares or by an expansion of SDSP's capacity to process soybeans. The annual distribution of patronage will be in cash, credits, capital stock, certificates of interest, revolving funds certificates, letters of advice, or other certificates or securities of SDSP or in any combination allocated to patrons on a patronage basis. Each member is entitled to one vote on all matters submitted to a vote by the membership.

Original subscribers agreed to purchase one share of common stock at \$200 (with par value of \$1.00) and a minimum of 2,500 equity units. One-half of the stock purchased was used as working capital to initiate the project. Each equity unit purchased obligated the buyer to deliver one bushel of soybeans to SDSP annually. Equity units were sold at \$2.00, \$2.25 and \$2.50 per unit, with an average equity unit price of \$2.19 and the average investment per member at about \$10,000. Originally, 9,419,500 equity units were sold and, by action of the board of directors, this was increased on a three for two basis so that now 14,129,250 equity units exist. This action, in turn, has increased each member's soybean delivery requirement.

Membership must consist of 85 percent of the active producers, and this is maintained by only approving transfers of shares to an active producer. Fundraising started in South Dakota, and in the first year, \$9 million was committed by South Dakota producers. Further efforts in Minnesota increased the commitment to \$20 million. The board is represented by members from seven districts: four from South Dakota; two from Minnesota; and one district representing all remaining Minnesota counties, all North Dakota counties, and all states located outside of Iowa, Minnesota, North Dakota, and South Dakota.

Transfer of Shares and Equity Units

In general, shareholders may transfer their stock and equity units to immediate family members; a family farm corporation or partnership in which the member is a shareholder; an owner, partner, or shareholder of a dissolved partnership; or a new entity following completion of a merger. Other transfers of shares and equity units must be to producers and can only take place after the shares of common stock and equity participation have been offered to every other member-owner of the co-op. If more than one shareholder of the co-op desires to purchase additional shares, they may do so at the price offered. In the event that no members of the co-op want to purchase the shares and equity units of participation, the member-owner may—subject to the consent of the board—transfer the common stock and equity units of participation to the originally proposed transferee, assuming the producing entity is eligible for ownership. Some

shares have transferred to other ownership as the original number of equity owners was 2,087 and is currently at 2,103. The most recent sale of equity units was completed on April 18, 2000. They sold for between \$2.90 and \$3.30, with an average price of \$3.10 each. When equity units are offered for sale, members have a right to bid for increments of 250 equity units, and they have a right to better their bids. The offer to bid by members is contained in *Bean Stock*, the monthly SDSP publication.

Member Delivery of Soybeans

Equity stock issued currently totals 14,219,500 shares. The board will modify the call for delivery each year to provide the volume of soybeans needed to meet the yearly business plan. Currently, the call per equity unit is 1.8 bushels. SDSP has a marketing pool which will purchase soybeans on behalf of the equity owner. If the supply from farm delivery is insufficient, purchases can be made from other area grain elevators.

Board of Director Representation

Board members are elected for three-year terms with three directors chosen from each of the seven districts. One-third of the members are elected each year, and elections are held at the SDSP annual meeting. Amended SDSP bylaws allow for three (3) consecutive terms (vs. two originally). The board generally meets monthly or whenever special meetings are called. The SDSP annual meeting must be held within 180 days of the close of the co-op's fiscal year, at a time and date determined by the board of directors. Officers of the co-op are a president, vice-president, secretary, and treasurer and are appointed by the board. Four standing committees—public relations, planning, governance, and financial/audit—play an active role in providing input and direction to the board and to the CEO.

The public relations committee consists of six board members who maintain good relations with other cooperatives, the community, and the public at large. They also strive to see that good communication is provided to members in order to help maintain harmony between the diverse interest groups of the organization. The committee's goals are to maintain a strong and growing image of SDSP's business goals by realizing that the cultivation of financial or political support from its fellow members, producers, the general public, and government officials will help meet this goal. The committee will focus on the development of nonmember interest in the co-op and will assist in increasing the value of owner shares.

The planning committee consists of eight board members who provide assistance to see that the co-op is positioned for sound growth, sound planning, good budgeting procedures, and recommendations for changes in assets. The main committee goal is to provide direction, governance, and resource allocation to SDSP's associates in achieving their mission in future years. Execution of duties includes an annual review and recommendations to guide capital investments, an annual audit of selected capital projects (and all projects exceeding a \$500,000 investment), review and recommendation of investment projects, and other reviews called for by the CEO or board.

The governance committee consists of four board officers and committee designates who provide assistance with the full board's core responsibilities. They meet the SDSP goals of providing direction to the board of directors and CEO in the following ways: provide supervisory guidance to the CEO, review and provide direction in SDSP's legal responsibilities, approve CEO's selection of key management personnel, select and recommend SDSP's CEO, and review and recommend organizational structure modifications and salary schedules.

The financial audit committee consists of seven board members who assist the board by reviewing and recommending the fiscal year operating budget and by safeguarding SDSP assets. The committee's goal is to provide recommendations for the direction, governance and resource allocation to SDSP associates. The committee helps maintain the overall SDSP goal of remaining financially strong while making a maximum value-added payment to members, maintaining growth and stock value, and safeguarding the assets of the co-op.

During the construction stage, the board of directors was directly involved in the process of managing the operation. The board continues to make contributions to the operation through active participation in regular meetings and through work on the standing and ad hoc committees. Several new innovations, including the idea of entering a partnership with Urethane Soy Systems Company, Inc., came about as a result of a board member's idea. The CEO for SDSP had 20 years of experience with a major soybean processor prior to his selection, and he brought a great deal of experience and expertise to the organization. The board and CEO, in concert with other key employees of the plant, are good role models of how an organization can work in harmony to achieve well-established goals.

SDSP has set the following goals, which were designed to serve the 2,100-plus members of the Co-op:

- To provide maximum value-added payment to shareholders. The intent is to return about 70 percent of the profit to co-op members and to use the other 30 percent for retiring debt and growing the company.
- To maintain the stock value, or value of equity units, of co-op members.
- To maintain a growth perspective of SDSP. This has been successfully accomplished as can be seen in the following examples: they have provided oil storage for the Chicago Board of Trade (a profitable operation); increased the plant capacity from 50,000 to 80,000 bushels per day; made improvements in marketing procedures for soybean hulls; and have expanded by forming a partnership with a new product, SoyOyl™, a component of the Urethane business (SDSP n.d.; USDA 1998).

Operational Process of the Plant

SDSP is located on a 40-acre site on the east side of Volga, south of Highway 14 (the main highway through Volga). The entrance to the plant, located eight miles west of Brookings, South Dakota has changed the flow of traffic since SDSP began processing. Some of the soybeans that need to be processed come from other elevators, but the majority, about 75 percent, come by truck delivery from farmers. The facilities are streamlined to handle soybeans received either by

rail or by truck. Trucks are weighed on a 120-foot scale and then proceed to truck-and-rail receiving where soybeans are sampled for moisture and grade and then precleaned before being dried.

SDSP has a processing capacity of more than 80,000 bushels per day, so they turn over quickly. The drying capacity is over 5,000 bushels per hour, and after drying, they go to a preparation area where they are cleaned, cracked, dehulled, and moved by conveyor for oil extraction. Oil is extracted and distilled using liquid Hexane in a washing process that removes the oil. The exposure to Hexane draws oil from the flakes and, in addition to oil, produces soybean meal. Each bushel of soybeans yields approximately 11 pounds of oil and 48 pounds of meal.

Oil goes to crude storage tanks where it is sampled for quality before being pumped into storage. The oil is sold for the manufacture of products such as margarine, shortening, glycerin, printing ink, paints, soaps, linoleum, plastic, rubber substitutes, and biodiesel fuel. The meal is further processed to meet customer specifications. If a customer wants a lower percentage protein meal, the raw meal is blended with soybean hulls to lower the protein content. Meal is used for animal feed or as a feed additive or ingredient. The final phase of the operation is the loading of the oil and meal on trucks and train cars for shipment to manufacturers for further processing into final products.

SDSP uses a high-tech automated weighing system which enables them to automate the ticket process (see www.agris.com). The weight is taken and then automatically printed and recorded with minimum chance of human error. The entire process is computer generated to provide rapid, accurate, and dependable records. With the large number of trucks coming each day, the process of creating tickets by hand would be very difficult. When the truck pulls on the scales and the operator types in the license plate, information on the customer automatically appears on the screen. Weights and grades are automatically gathered from scales and grading equipment and entered. Other high-tech controllers are used in the plant such as the programmable logic controller, which is monitored continuously for overall system monitoring and control.

Additional Innovations

SDSP organizers had a vision of not only a soybean processing plant but also the development of a consumer business through which even more value could be added to members' soybeans by moving them one step closer to the consumer. A move in this direction was realized in late 1999 when SDSP announced its partnership with Urethane Soy Systems Company, Inc., a manufacturer of SoyOyl™ (see www.brookings.net/sdsp/pr-soyoy1.html). The product utilizes crude soybean oil, a renewable resource, as the base for countless industrial products, making today's producer a more environmentally friendly partner in the global universe. This technology is the only one of its kind in the world, and a portion of the technology is exclusive to SDSP. The board and management of SDSP are looking for ways to return maximum value-added payments to members, and are continually pursuing such opportunities to strategically position the co-op in the soybean industry. Another innovative and profitable step made by the board and management

of SDSP was the construction of a large storage tank for soybean oil. This is characterized as an innovative investment in terms of risk management. SDSP maintains storage for grain obligated on futures contracts to the Chicago Board of Trade and saves on storage costs in this manner.

Plant Capacity

SDSP has been able to increase processing capacity each year while reducing its operating expenses. The changes in volume processed shown in **Table 4** illustrates SDSP's ability to upgrade the plant to handle a larger daily crush.

Table 4. Change in Volume Processed

<i>Commodity</i>	<i>Unit</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>Pct. Change 1998</i>	<i>Pct. Change 1999</i>
Soybeans crushed	Bushels	13,453,916	21,722,885	24,150,363	61	11
Soy meal produced	Tons	299,391	483,410	539,456	61	12
Soy oil produced	Tons	72,842	119,959	134,998	65	13
Soy hulls produced	Tons	23,343	41,039	35,136	76	-14

Source: SDSP 1998, 1999a.

While SDSP has been able to increase capacity each year, this has been done without a proportional increase in operating expenses. As volume increased, the operating cost per bushel processed decreased due to improved operating efficiency. The changes in earning structure are apparent in **Table 5**.

Table 5. Changes in Earning Structure

<i>Crop Year</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Bushels crushed	13,453,916	21,722,885	24,150,363
Gross proceeds	\$9,635,050	\$16,667,876	\$12,774,917
Operating expenses	\$(8,045,239)	\$(9,998,046)	\$(9,861,569)
Interest expenses	\$(1,964,815)	\$(1,286,172)	\$(707,644)
Nonoperating revenue	\$890,698	\$1,768,002	\$1,769,289
Patronage revenue	\$51,524	\$1,359,820	\$648,443
Net proceeds	\$567,218	\$8,511,480	\$4,623,436

Source: SDSP 1999a.

The low crush margins of 1999 caused a reduction in net profit compared with 1998. Van Dyne and Blase (1998) had estimated expenses of slightly more than \$7 million for a plant processing 16 million bushels per year. They also predicted a higher net profit as they used the long-term average gross margin of about \$.73 per bushel. SDSP had initial operating costs slightly higher than Van Dyne and Blase estimated in their first year of operation, but in 1998 and 1999, their operating expenses were less than those projected. Their ability to increase volume and keep operating expenses down enabled them to register a profit, even in the difficult

year of 1999. Average crush margins reached a 20-year low of \$.23 per bushel compared with \$.36 in the previous year. In 1998, SDSP took advantage of high margins in the fall and established positions before the summer of 1998 crash. Differences in earnings between 1998 and 1999 are quite evident as gross proceeds dropped \$.24 per bushel. With increased efficiency, staff experience, and lower interest rates, SDSP reduced operating and interest expenses by \$.087 per bushel in 1999.

Operating Profits

In keeping with the most emphasized line in the mission statement—which is “making the maximum value-added payment to our members”—SDSP distributed \$5,822,558 in 1998 and \$3,436,451 in 1999 to member-owners. Distribution of profits from the corporation has approximated the board goal of around 70 percent (68 percent in 1998 and 74 percent in 1999). The 1999 distribution of dividends was in a period when members received some of the lowest prices for their soybeans in many years. **Table 6** contains a summary of profit distribution and utilization.

Table 6. SDSP Profit Distribution and Utilization

<i>Disbursement</i>	<i>Fiscal Year 1998</i>	<i>Fiscal Year 1999</i>
Allocated to members	\$8,511,477	\$4,623,436
Cash paid to members	\$5,822,558 (68 percent)	\$3,436,451 (74 percent)
Cash retained by SDSP	\$1,430,331 (17 percent)	\$794,999 (17 percent)
Equity patronage retained	\$1,258,588 (15 percent)	\$617,214 (13 percent)
Total profits	\$8,511,477	\$4,623,436
Total patronage retirements	–	\$ 225,228

Source: SDSP 1999a.

Financial Position

SDSP has continually upgraded its plant capacity and anticipates reaching a daily crushing capacity of 100,000 bushels in the next few years. They are currently able to crush 80,000 bushels per day and should be able to reach the stated goal. In addition, they are looking at the development of other value-added products and would like to see a significant part of their profits from such ventures. One possibility under consideration is refining oil produced at the plant.

Stock value has increased substantially since inception, having more than doubled since the initial offering. The value of equity units continues to increase from an average sales price of \$2.49 in 1998 to \$2.86 in 1999. The increase in the trading price of equity units can be attributed to producer confidence generated as the plant continues to prosper. The average of April 2000 sales was \$3.10 per equity unit. The debt to equity ratio at the end of FY99 was 48.4 percent compared to 49.1 percent in FY98. Production has increased each year, and the interest expenses in FY99 were only \$.029 per bushel processed compared to \$.059 per bushel in the previous

year. The reduced interest cost was due to a restructuring of the loan with CoBank, so that better use could be made of excess cash during the year, and because of lower interest rates.

Incentives Provided SDSP

Most of the capital and drive for this facility have come from organizing farmers and shareholders. The original feasibility study was funded by the South Dakota Soybean Research and Promotion Council, and an additional \$1 million low-interest loan was obtained for the project. A half-million dollar low-interest rate loan was obtained for railroad spur and service, and Brookings County agreed to phase in the property taxes over a five-year period.

Problems Encountered

The creation of SDSP has demonstrated that it is possible for U.S. agricultural producers to participate in and find success in value-added agriculture. It has also shown that it is possible for such an operation to compete successfully in an enterprise formerly dominated exclusively by larger enterprises. The playing field isn't always level, however, as has been experienced by SDSP (Christianson 1999). The core leadership needs innovative thinking and managerial skills outside their competencies. They must be able to evaluate feasibility studies prepared by individuals or corporations who might work for the demise of the project. For example, two of the nation's major soybean processors have shut down part of their capacity at this time, and this could be discouraging to farmers wanting to set up a value-added operation.

Value-added co-ops must learn to cut the red tape that is a part of the requirements for funding from essential government programs. If SDSP decides to expand into another major project, they may need to raise additional capital to meet the restrictions of such loan programs. Railroad rates established by the Burlington Northern Santa Fe (BNSF) have not been favorable to SDSP. Rates established by BNSF apparently are market-based and, as such, a greater cost for shipping meal exists for SDSP than for a similar product shipped from locations that are a greater distance than Volga. For example, a shipper from Council Bluffs, Iowa, ships meal to Sweet Grass, Montana, for \$1.38 per mile, and SDSP pays \$2.12 for only two-thirds of the distance. This difference in rail cost gives the appearance that the rates established by the BNSF are based on the delivered price of meal rather than the actual cost of rail distance.

In addition, the Chicago Board of Trade has implemented changes that single out and target SDSP while not affecting the other 40 delivery locations. The anticompetitive and near monopolistic practices of industry giants must be considered and guarded against in SDSP and other value-added operations.

Some of the hurdles that had to be crossed included finding a reasonable site with an adequate water supply, soil capable of supporting major structures, economical utilities (gas and electricity), highway and rail access, and availability of an air quality permit. Each of these steps took considerable time and analysis by board members who led the drive.

Economic Activity Review

The Brookings Area Chamber of Commerce provided data that estimated the economic activity for the region as a result of SDSP. The activity during the construction phase and during the first three years of operation is impressive for the region. The data which they collected provides an average and high estimate of economic activity which is presented in **Table 7**:

Table 7. Estimated Economic Activity Generated by SDSP

<i>Construction Phase</i>	<i>Average Estimate (millions \$)</i>	<i>High Estimate (millions \$)</i>
Original—\$32.7 million	49.0	65.4
Development Expense—\$1.5 million	2.3	3.9
Reinvestment—\$9.0 million	13.5	18.0
Total Investment	64.0	87.2
After three years of operation 60 million bushels have been processed.		
Operating expenses (\$32 million/\$7.6 payroll)	49.3	53.5
Soybean basis input— 120 million bushels/\$0.20 per bushel	40.0	40.1
Value-added payment— \$9.2 million	18.4	27.6
Total operational	107.7	121.2
Grand total (Three years)	171.7	208.4

Source: Christianson (data from Brookings Chamber of Commerce) 1999.

The economic activity was a welcome addition to the region, and when the full taxes are paid by SDSP (end of five years), the community will experience greater benefits. The operation employs 64 full-time employees and supports many others because of the activity of 100 or more trucks bringing soybeans to the complex daily. Since the inception of SDSP, a new full-service truck stop has been built across the street from the plant. As the plant explores different options (value-added programs, for example), the economic impact to the region will continue to increase.

SDSP Customers

Ninety-five percent of the product marketed is in the oil and the meal produced (Christianson 2000; Hope 2000). SDSP receives revenue from oil sold to CENEX Harvest States Processing and Refining in Mankato, Minnesota. Meal is typically sold within South Dakota, Canada, and the Pacific Northwest. Hulls are sold either as loose hulls or as pellets, locally and within the region. The South Dakota Hutterite communities have major livestock operations and are major purchasers of hulls and meal.

Summary and Lessons Learned

SDSP has been in operation since late 1996. Initial formation steps were taken in 1992 via a feasibility study, followed by a producer group's interest in developing the idea in 1993, and by groundbreaking in 1995. This was the nation's first soybean crushing plant built since 1978. The producer's group acted as incorporators and served as the initial SDSP board of directors. They updated the feasibility study, planned the building and operation of the processing plant, circulated a prospectus, and offered stock to potential investors in South Dakota and Minnesota.

In November of 1993, the State of South Dakota granted cooperative status to SDSP. The plant capacity has continually increased and proven to be profitable. This is true even in a period of very low soybean prices and narrow crush margins. SDSP is a new generation cooperative (NGC) owned by more than 2,100 farm families from Iowa, Minnesota, North Dakota, and South Dakota. The co-op's goals of adding value to members' soybeans, maintaining a financially strong business, and providing a major return of revenue to member-owners have been realized. In addition to crushing and processing soybeans into meal, oil, and hulls, SDSP has been able to move a step closer to the consumer business by a partnership with Urethane Soy Systems, Inc., a manufacturer of SoyOyl™. At the time of the completion of SDSP's third operational year (August 1999), the co-op had achieved the following:

- Raised more than \$21 million from farm families to build the business.
- Added value to 60 million bushels of producers' soybeans.
- Generated between \$175 and \$208 million of economic activity in the region.
- Returned \$9.2 million in cash patronage to member-owners.
- Committed or reinvested more than \$20 million of additional capital into the business.
- By its presence in the region, SDSP reduced the basis for soybeans sold by farmers by about \$.25 per bushel, thus improving the income of both members and nonmembers.

Many lessons have been learned from the experiences of this NGC. The current board president and other soybean producers had a vision of creating a new, farmer-owned soybean processing facility. They were able to obtain good information through a feasibility study. By learning the mechanics of the business, they directed the creation of the cooperative. Member-owners conceived the idea and had the dedication and desire to commit to it that convinced other farmers (2,100 others) that this was a good idea and would enable producers to succeed in value-added processing. By so doing, they could capture a larger share of the food dollar for the commodities grown. The success of this venture was possible because the leaders were totally dedicated to the project and gave freely of their time and other resources to make the idea a reality. The task was made somewhat easier, especially with the Minnesota members, because Minnesota producers had already experienced success in value-added processing. The SDSP board recognized the value of a professional manager in the business and had the foresight to select a CEO with experience in the field, who was able to provide additional guidance to help the company grow. Board members continue to play a vital role in the company through their regular meetings and the work of the four major committees that provide guidance to the CEO

and board of directors. Board members receive pay for their services and continue to grow in their ideas and service to the company.

Because of their experience in the formation and operation of the co-op, board members (or implementors of value-added co-ops) have become very knowledgeable about the business and continue to make substantial contributions to the business. For producers to create a value-added processing operation, their leadership must be totally dedicated and be willing to give freely of their time to the project. They must learn a new way of thinking as well as new skills and business principles. The tasks that must be accomplished by such a group are as follows:

- Have a vision and visualize what is needed.
- Develop a feasibility study that predicts the potential success of the operation.
- From the feasibility study, create a prospectus that can be used to convince others that they should be a part of this venture.
- Create a business plan that can be used for acquiring capital to run the business.
- Create a capital formation plan, learn to understand the security laws of the state, and conform to those laws.
- Be able to understand the steps necessary to obtain the permits and documents needed for funding at the local, state, and federal (in the case of a USDA loan guarantee) levels.
- Develop an organizational structure for the co-op that enables a diverse group of owners to function in an orderly and decisive manner.
- Be ready to hire professional help (e.g., management) as needed to have the skill needed for such an operation.
- Be able to attract a sufficient number of member-owners to provide both the capital and the commodity to be processed for the operation.
- Networking between farmer-owned, value-added co-ops becomes a necessity if producers plan to obtain a greater portion of the processors' profit. The logical place for groups interested in creating value-added co-ops to seek help is through co-ops who have experienced success in the process (such as SDSP who has indicated a willingness to consult with such groups). Producers should be willing to pay successful co-ops for assistance with feasibility studies, operational techniques, and management assistance.

Growing such a business is a difficult, time-consuming task that has many potential pitfalls; however, as the members of SDSP have discovered, when successful it provides a great deal of personal and financial satisfaction.

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