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# New Generation Cooperatives: *Case Study*

## *Case Study of Southwest Iowa Soy Cooperative*

*by Norman Walzer and Mary Holmes*



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## **Case Study of Southwest Iowa Soy Cooperative**

*by Norman Walzer and Mary Holmes*

Depressed crop prices leading to lower incomes for farm producers across the United States have motivated many groups to organize in an effort to improve the financial conditions for farmers. The numerous approaches that have been attempted typically include finding new markets for current products, sometimes through niche marketing using an identity preservation technique. In other cases, farm producers have tried to reduce operating costs through joint purchasing or marketing efforts. Still, other producers have tried to obtain economies of scale by increasing their size of operation through the purchase or rental of additional land.

The specific approach adopted to increase farm incomes depends partly on historical trends, industry structure, market conditions, and the types of products grown in the region. In the Great Plains and Upper Midwest, producers have had a history of forming cooperatives to lower input costs and market output. Many of these cooperatives were formed in the early 1990s, sometimes to bring better services to rural areas. In some cases, the cooperatives then moved on to provide services beyond their members and even, at times, compete with the membership in service delivery.

The 1990s brought a new type of cooperative movement, which focused on adding value to farm products before they left the producers' control. These arrangements, New Generation Cooperatives (NGCs), are used in raising fruits and vegetables, corn, soybeans, and livestock. They typically are very different in structure and are unique in product and delivery. A common feature, however, is that their mission is to capture a greater share of the profit in the food chain, namely to bring producers a larger share of the profit from raising and delivering agricultural products.

This case study examines an effort in central Iowa to build an NGC based on processing soybeans into soybean meal and oil with the final products destined for animal feed. The NGC is still in the early stages and has faced some difficulties reaching the expected market. At the same time, it has been limited by a decline in the expected crush margin. In subsequent analyses, we examine approaches used in creating this NGC and try to identify some of the obstacles that were overcome and those that remain to make the effort profitable.

### **Background<sup>1</sup>**

The Southwest Soy Cooperative (SSC), located in Adams County, Iowa, grew out of the general discontent with soybean market prices and a desire to stabilize farm incomes in 1995. Adams County is a rural area located 30 miles north of the Missouri line and 65 miles east of the Nebraska line. The nearest major markets for soybeans grown in this area include Omaha (80

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<sup>1</sup>Much of this material is based on a feasibility study which was prepared by Jeff Jobe, USDA-RD, Rural Business-Cooperative Specialist, in 1996. That information is supplemented by personal interviews with Ray Gaesser, Roy Parsons, and Ken Pangburn which were conducted in July 1999.

miles west), Manning, Iowa (90 miles north) and Des Moines, (110 miles northeast). In addition, other smaller processors were setting up operations in the area surrounding Adams County. Previously, the markets were dominated by large conglomerates.

Against this setting of low prices and somewhat limited markets, the Raw Agricultural Products Committee (RAPC) of the Adams County Economic Development Corporation was created in 1994 to find ways to increase the profit stream from local crops. Several options were considered including raising and cleaning corn to make it food grade, raising horticultural crops, and initiating a large feed lot operation to expand markets for local products. Concerns were raised about some of the problems that had been experienced with large livestock operations, so attention shifted to processing soybeans into cattle or hog feed since livestock is an important industry in the area. For instance, Iowa leads the nation in hog production and is a major exporter of beef. In 1995, the RAPC recommended further exploration of a plant to process soybeans into a meal for animals and into an oil with multiple commercial and industrial uses. In October 1995, the RAPC requested that the U.S. Department of Agriculture-Rural Development (USDA-RD) undertake a feasibility study of this type of business and make recommendations regarding an organizational structure to bring it about with a goal of raising the price of soybeans by \$1.00 per bushel for members.

### **Operational Feasibility**

Undertaking this type of venture involved leadership from five key individuals, including producers and businesses who owned land, with moral and financial support from others in the area. From the start, the venture was seen as a local economic development project, which involved support from local financial institutions as well as producer members. There is a history of co-ops in Iowa and neighboring states such as Wisconsin and Minnesota; however, it was a new experience for those involved in this specific endeavor.

The feasibility study, prepared by Jeff Jobe, clearly demonstrated the potential for profitability of the proposed activity, but it also indicated that the profit margin could be negatively affected by many factors including crush margin (difference between the price paid for soybeans and the price of soybean meal and oil produced). Likewise, to be profitable, the NGC had to market its output well and reach a specific volume of production. Informed local management was also identified as crucial to the success of this venture. Several sensitivity analyses were undertaken to illustrate the importance of these factors. Elements such as costs of inputs, management structure, and markets are not unique to this endeavor. Virtually any business operating on a relatively slim margin must pay attention to them as well. Because of their importance to others considering this type of effort, some time is spent on each element below.

### **Soybeans as Inputs**

The SSC idea centers on Adams County but also recognizes the surrounding seven counties as potential suppliers of soybeans. Building on assets of the region, especially as local inputs, is important to the success of this venture. Approximately 18.7 million bushels of soybeans are

produced in Adams County and the surrounding seven counties annually, with 1.8 million bushels produced in Adams County alone according to Jobe's 1996 feasibility study.

Producing soybeans is not the issue; retaining the income on the farm is the bigger question. Jobe estimates that 40 percent of the soybeans in Iowa are exported without further processing. If value is added to the soybeans, it mainly comes from feeding livestock and marketing the animal products. In 1996, Jobe estimated that 68.8 million bushels of soybeans were consumed by livestock as soybean meal, and this meal was processed at 24 existing facilities.

The issue that faced the potential investors in the soybean processing cooperative, then, was how to organize and create a facility that could further process the soybeans and allow farmer-producers to capture a share of the income generated from this processing endeavor. At the same time, if the venture created jobs, residents in nearby communities could gain. It was clear from the beginning, however, that a large number of full-time jobs would not be created in this type of venture. Nevertheless, if the farmer-producers received higher incomes from soybeans produced, the additional income would be spent locally thereby stimulating the economies of surrounding communities. Thus, local business leaders and financial institutions had reason to invest in this type of venture, and, in fact, the venture was supported by both financial institutions and commercial business interests.

### **Structuring the Business Venture**

There are two ways in which farmer-producers in this type of venture can earn additional income. First, they can receive a premium for the grain supplied to the co-op. A premium for producers, of course, means higher input costs to the business venture than would have occurred if the soybeans were purchased on the open market. The premium, however, provides an immediate benefit to co-op members and offers an incentive to join the overall effort.

Second, members of the co-op share in the returns from the enterprise if it makes a profit, or may have to make additional financial contributions if the venture does not meet expectations. Assuming profitability of the co-op, members will receive a return on their investment. This return depends on the profits which, in turn, depend on accessing lucrative final markets and keeping the production process as close to the final consumer as possible.

The soybean processing plant uses an Insta-Pro (R) extrusion-expelling process<sup>2</sup> to convert the soybeans into a meal and extract the oil. A detailed description of the precise process is not needed here, but the extruder "generates heat through friction to cook, sterilize, stabilize, texturize, and dehydrate the soybean" (Jobe 1996). The process creates a high-quality animal feed with a high fat content that is readily accepted by animals as a protein supplement.

Extruded-expelled soybean meal contains 45 percent crude protein and 7 percent crude fat. The extruded-expelled meal is produced by an environmentally sound process that does not require solvent extraction of the oil. Through this process, the meal does not assume the bitter taste typically associated with the solvent-extraction process. The meal is a golden color with a

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<sup>2</sup>Manufactured by Insta-Pro International, 10301 Dennis Drive, Des Moines, IA 50322.

low moisture percentage. It is typically used to replace conventional soybean meal and some of the fat in any diet. It is ideal for pig starter where a low level of antinutritional factors are required. It is also an ideal source of the bypass amino acids required for milk production.

A 1994 study conducted at Kansas State University concluded that nutrient digestibilities and availabilities of indispensable amino acids tended to be greatest in extruded soybeans. The Insta-Pro extrusion process was compared with conventional soybean meal and roasted soybean meal.

## **Potential Markets**

Initially, the SSC targeted pork producers as a main market for the soybean meal as a protein supplement. According to Jobe (1996, 12), the soybean meal contains 7 percent fat making it a high energy supplement which represents a 44-46 percent protein supplement. Iowa is number one in the nation in pork production at 5.35 billion pounds of pork processed in 1997.

The intended market radius was approximately 40 miles wide with an expected 500 to 700 potential hog producers. The revised market is 70 to 80 miles from the production point. SSC has a production goal of 400 tons of meal per month and understands that, with recent consolidations of hog production, growth in markets must come from dairy production, and efforts have been directed to those customers. Thus far, in the Midwest, the dairy operations have not followed hog production patterns toward consolidation and vertical integration. However, interviews with SSC personnel demonstrated an understanding of the need to access new high volume and niche markets.

The local market for soybean meal was expected to be substantial. The feasibility study indicated that in the eight counties, including Adams, there is a demand for 61,557 tons of protein supplement per year. Under the expected production targets, the SSC would produce 13,456 tons per year or approximately 21.9 percent of the local demand, with the remaining meal obtained from the closest markets that are within an 80 mile radius of the processing facility.

In addition to the feed supplement, the soybean process generates a variety of oils for commercial and industrial uses. Potential markets for these products were less well-defined but Kraft Foods in Jacksonville, Illinois (309.4 miles away), and a local feed supplier in the eight-county area were identified in the feasibility study. With additional research and the possible refinement of the oil, it is possible that other industrial markets could be found, but reaching these markets could mean additional processing facilities and higher subsequent costs to the co-op as well. While investors generally recognized these potential markets, they did not aggressively pursue them as part of the initial venture.

To assess local interest in starting a soybean processing venture, the steering committee undertook a survey of farmer-producers in the region. In the winter of 1995, a local media campaign was conducted using newspapers and radio to generate an awareness of the effort and to possibly stimulate interest in becoming involved. A mail questionnaire had been sent to approximately 4,000 residents to determine whether they would be interested in investing in this venture and/or willing to purchase the soybean meal produced to use in their feeding operations. No effort was made to obtain a complete sample of soybean producers in the area; rather, the

intent was only to determine whether a sufficient number of producers were interested in engaging in this venture to make it succeed.

According to the feasibility study, the survey identified a willingness to commit 206,000 bushels of soybeans to the process. Overall, 34 producers completed the surveys, 23 reported being “very interested,” and 10 reported “an interest if more information could be provided.” The 206,000 bushels reported as a possible commitment represented approximately two-thirds of the planned production in the initial year. Thus, it was clear from the outset that additional commitments by farmer-producers would be needed to provide a stable supply of soybeans for this processing plant. Likewise, concern was expressed in the feasibility study regarding the adequacy of the market for the soybean meal (Jobe 1996, p. 11).

In fact, many entrepreneurs experience difficulties accurately accessing the market(s) for their product, and this may be one of the most serious shortcomings in business start-ups, especially those involving farm products. In the past, farmer-producers relied on an extensive marketing system for their products; namely, they delivered grain to a local elevator or river terminal.

Engaging in value-added business, on the other hand, represents a set of entirely different tasks, some of which producers have not had to deal with extensively in the past. Obtaining a commitment from producers to provide the inputs to the soybean processing plant is certainly at the top of the list of tasks that need to be accomplished. Identifying markets to be served also ranks high. Putting together a financial package to make the operations profitable requires skills and familiarity with issues that not all farmer-producers possess.

Organizing the soybean processing activity, therefore, required professional skills in marketing, finance, and production management. This combination of skills was not likely to be found among members of the proposed co-op. Thus, it was essential that a professional manager be hired for the venture, and that decision was made early in the process. Hiring the manager early in the process makes sense because then the manager can assist in organizing the membership drive. As is noted later, some difficulties arose with this position that may have delayed the profitability of the enterprise.

To determine interest in joining the proposed venture, 200 surveys were mailed out to farmer-producers, of which 130 responses were obtained with 70 of those indicating an interest in becoming members. A majority of the members purchased one or two shares. The members typically have larger than average farm size. Members must commit 1,300 bushels of soybeans per share per year, which represents approximately 29 acres of soybeans.

Several approaches could have been used to attract members and participants to the co-op. First, the basic membership should always be made up of the farmer-producers who supply soybeans to the processing plant. Second, it is also possible to structure the co-op to include users of the final product. In this case, it would be pork producers who would receive a return based on the amount of soybean meal purchased. Including the users makes sense because it helps solidify the markets. On the other hand, it can be difficult to attract these members due to

commitments they may already have with suppliers or competition from other purchasing cooperatives with established markets.

In fact, as hog producers increased in size, the industry, became vertically integrated, meaning that many large producers already have sources for purchasing feed. Competing with these markets means that the SSC must establish its product as superior in weight-gaining potential, lower cost, or providing some other advantage. In addition, it must establish a lasting presence as a dependable supplier for users to shift from their existing feed sources. This has proved difficult for SSC for several reasons.

1. The main advantage of the extruder process used by SSC is that animals gain more weight per pound of meal fed than in the case of the feed supplied by competitors. As has been determined through interviews (see footnote 1), local informal tests by producers have documented this fact. The estimated cost savings, based on informal tests, is between \$35 and \$40 per ton gained. However, for these gains to be accepted by a large number of hog producers and cause them to shift from current suppliers requires independent tests and documentation by an impartial source such as a university. These tests are estimated to cost between \$30,000-\$50,000. While funds exist for tests and documentation of innovative productions, it is difficult to make the case that what is being done by SSC should be included in the innovative category. These tests are somewhat expensive and have, to this point, been beyond the means of the SSC in its fledgling operations since 1997.
2. Meeting expected production levels to make the processing plant financially stable requires a specific level of operation. The feasibility study is based on two eight-hour shifts. To reach this target, requires a larger market than the co-op currently has. The upshot is that financial losses, even though manageable, have occurred, weakening the confidence of purchasers that the co-op will survive. At the same time, without the additional volume and markets, it is difficult for the co-op to prove that it can last. In many ways, these difficulties are not unexpected or unusual for a business in its early operations but point out the importance of having adequate financial capital and management in place when the venture begins.

### **Getting Started**

The SSC began operations in 1997 as a closed co-op organized under Chapter 501 of the Iowa Code. Selection of a co-op style of business was made mainly for the following reasons: (1) Iowa statutes limit the size of corporations to a maximum of 35 investors; since the intent was to work with a larger number of farmer-producers in the soybean processing plant, an alternative organizational structure was needed, and (2) co-ops provide tax advantages over limited liability corporations.

The SSC started with 70 members in 1997, and the number has declined to 58 in 1999. Each member contributed \$1,500 at the beginning plus a commitment of 1,300 bushels of soybeans to be delivered to the processing plant annually. Operating losses forced a call for an additional

infusion of funds in 1999. It took between 18 and 24 months to go from the start of discussions to the actual formation of the co-op. SSC is managed by a five-person board of directors, each serving a three-year term. The terms are staggered so that each year approximately the same number of members are elected.

While initial plans called for a location in the Bluegrass Industrial Park in Corning, Iowa, an alternative site was found in a vacant elevator that already contained storage facilities. An arrangement was made with the owner to rent the facilities for \$3,500—essentially the cost of storage fees for the soybeans—but the SSC had to rehabilitate the building for use and this rehabilitation project was more expensive (\$100,000) than had been budgeted (\$40,000). The high cost of rehabilitating the building, in turn, drained the funds for alternative uses such as market development or professional staff. The SSC also worked with utilities to obtain a reduction of 5 to 6 percent in utility costs.

### **Financial Structure**

In order to meet its anticipated capitalization needs of \$530,000, the SSC is financed through several funding sources (**Table 1**):

1. Members contributed a total of \$200,000 in cash from sales of 128 shares to 70 members in 1997. This represents approximately 40 percent of the total financing. Because of operating losses in 1998 and expected losses in 1999, each member was required to contribute an additional \$650. In some instances, participants decided not to continue their membership and forfeited their initial investment.
2. The SSC borrowed \$140,000 through a revolving loan fund from the Southwest Iowa Coalition at 5 percent interest. This is a ten-year loan and demonstrates the participation of local economic development groups working with private businesses to stimulate the local economy.
3. The USDA-RD loaned the SSC \$90,000 at 8.5 percent for 15 years under the Direct Business and Industry Loan program. This is a federal program designed to create additional jobs in distressed areas. It provides a source of needed funds for many business start-ups.
4. Iowa has a Rural Economic Value-Added Mentoring Program (REVAMP) to assist in creating value-added businesses and to help provide jobs in rural areas. The SSC obtained two grants through this program totaling \$25,000. The first grant was for \$16,500. These funds were used to pay the Small Business Development Center for developing the Business Plan, and the balance was used for legal costs incurred in the development of the organization. A second grant for \$8,500 was used hire a professional consultant to work on a marketing plan.
5. The Iowa Farm Bureau and the Iowa Soybean Board each contributed \$10,000. These funds were used to retain a marketing and sales consultant to work with the SSC.

6. USDA-RD's Cooperative Service staff in Iowa provided technical assistance by preparing the feasibility study. This is an in-kind contribution provided at no cost to the SSC. Feasibility studies by private consultants often run upwards of \$40,000 to \$50,000. In addition, several grants of \$1,000 and more were provided by local agencies as part of the start-up endeavor.

**Table 1. Financial Structure**

<i>Source</i>	<i>Amount</i>	<i>Percent of Total</i>
Sales of Shares to Membership	\$200,000	40
Southwest Iowa Coalition Loan	\$140,000	26
USDA-RD Direct Business & Industry Loan	\$90,000	17
REVAMP Grant 1	\$16,500	3
REVAMP Grant 2	\$8,500	2
Iowa Farm Bureau Donation	\$10,000	2
Iowa Soybean Board Donation	\$10,000	2
In-kind TA & Misc. Small Grants by Local Agencies	\$55,000	8
<b>Total</b>	<b>\$530,000</b>	<b>100</b>

Source: Southwest Soy Cooperative, 1999.

There are three types of capital stock in the SSC. Only one share of the first type of capital stock, *common stock*, may be held by a shareholder at a cost of \$100 per share; no dividends are paid on common stock.

*Class A Preferred Stock*, is used to determine the number of bushels of soybeans that members are expected to provide to the venture. This stock can be transferred between members with the understanding that no member can hold more than 15 shares of this type. No dividends are paid on this stock, and shareholders do not have voting rights on co-op decisions.

*Class B Preferred Stock*, the third type, is issued and redeemed at \$1 per share. Holders of this stock have no voting rights and the stock pays no dividends. This stock is not actually purchased. When a co-op has margins, the margins are distributed to the members based on their participation in the co-op in the fiscal year. In this case, it is the amount of beans delivered and processed by the co-op. The producer's percentage of the net margins are partially paid in cash (by law, the minimum amount paid must be 20 percent), and the balance is retained by the co-op. The producer at this point will be issued *Class B Preferred Stock* in an amount equal to what was retained by the co-op. At some point in the future, the board of directors will make the decision as to the oldest outstanding year of stock.

A philosophical issue that faces most, if not all, NGCs is the amount of earnings to be distributed to members. On one hand, retaining a large portion of earnings in some ways defeats the purpose of the co-op since it is intended to increase the incomes of members; however, expanding operations and replacing equipment requires that the co-op have access to capital. Over the long-term, these investments may pay the largest dividends for members. The SSC bylaws (2.4C) require that the co-op distributes "all net savings attributable to member business"

remaining after *Class B Preferred Stock* allocations have been made. Allocations of net savings can be made in cash or in *Class B Preferred Stock* at the discretion of the board of directors.

### Financial Operations

Since it began in 1997, the SSC operations have not met financial expectations. In 1998, it suffered a loss of approximately \$64,000 and it is expected to lose between \$18,000 and \$25,000 (including interest payments) in 1999.

The following three factors account for most of the financial difficulties experienced by the SSC thus far:

1. The crush margin at the outset was expected to continue at approximately \$1.18 per bushel of soybean meal. Even at this level, the margin is fairly tight; unfortunately, the crush margin dropped to \$1.13 and then to as low as \$.13 as the price of soybean meal dropped more quickly than the price of soybeans. The feasibility study was clear that changes in the margin could make the venture unprofitable (see **Table 2**).

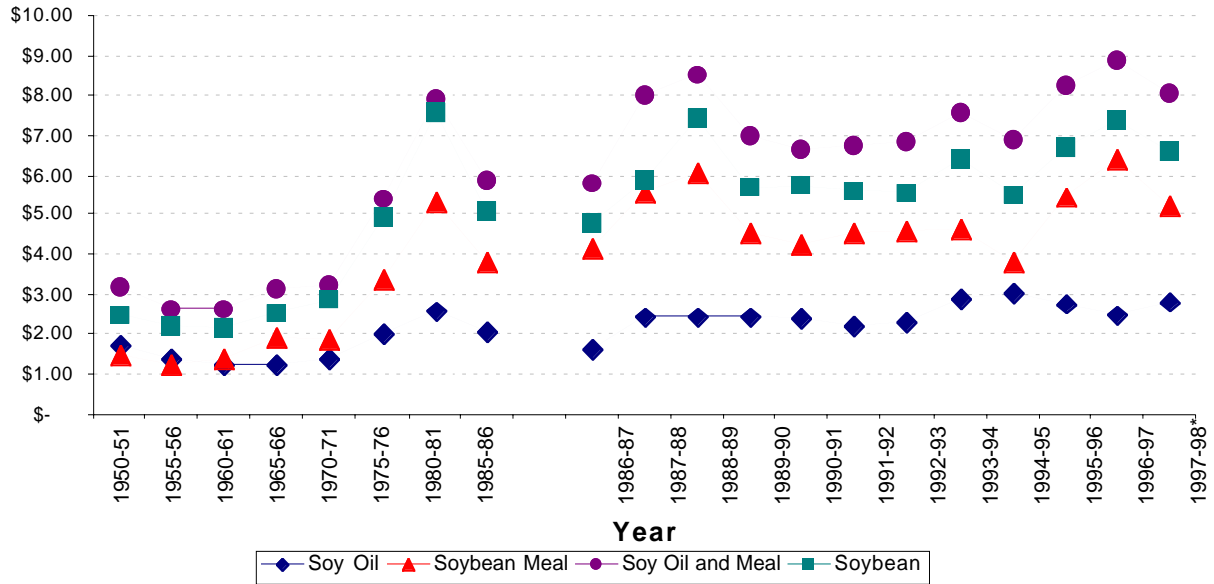
**Table 2. U.S. Soybean Products: Value and Crush Margin per Bushel, 1950-1998**

Year beginning September	Value of Products per Bushel			Soybean Price Rec'd by Farmers (dollars)	Margin Rec'd by Farmers (dollars)
	Soy Oil Value (dollars)	Soybean Meal Value (dollars)	Total Value (dollars)		
1950-1951	1.74	1.48	3.22	2.47	0.75
1955-1956	1.39	1.24	2.63	2.22	0.41
1960-1961	1.23	1.41	2.64	2.13	0.51
1965-1966	1.26	1.91	3.17	2.54	0.63
1970-1971	1.38	1.88	3.26	2.85	0.41
1975-1976	2.02	3.40	5.42	4.92	0.50
1980-1981	2.58	5.32	7.90	7.57	0.33
1985-1986	2.06	3.84	5.90	5.05	0.90
1986-1987	1.65	4.15	5.80	4.78	1.02
1987-1988	2.44	5.54	7.98	5.88	2.10
1988-1989	2.42	6.08	8.50	7.42	1.08
1989-1990	2.44	4.53	6.97	5.69	1.28
1990-1991	2.39	4.28	6.67	5.74	0.93
1991-1992	2.20	4.53	6.73	5.58	1.15
1992-1993	2.28	4.58	6.86	5.56	1.30
1993-1994	2.91	4.64	7.55	6.40	1.15
1994-1995	3.07	3.83	6.90	5.48	1.42
1995-1996	2.78	5.44	8.21	6.72	1.49
1996-1997	2.47	6.41	8.88	7.35	1.53
1997-1998*	2.81	5.23	8.04	6.58	1.46

\*Through March 1998

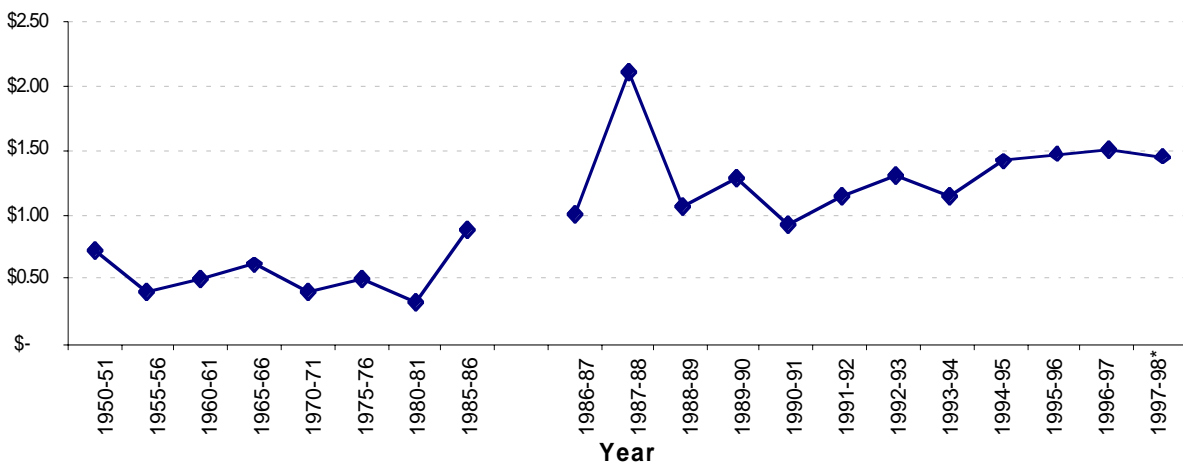
Source: USDA Economic Research Service, May 1998.

**Figure 1. Value of Soybeans and Products per Bushel**



\*Note: in both Figures, the year (x axis) changes from five-year intervals (1950-1985) to one-year intervals (1986-1997); the break in the lines indicates the change.

**Figure 2. Margin Received by Farmers per Bushel**



\*Because Census reports crush and production quarterly, yields of meal and oil will be adjusted quarterly.

Source: 1999 Soya & Oilseed Bluebook: The Annual Directory of the World Oilseed Industry. 1999. Bar Harbor, ME: Soyatech, Inc., p. 363.

Currently, producers are paid the Board of Trade price minus \$.35 per bushel to allow for the nearby basis. Producers will be paid within two days of delivery. The meal produced is sold at the Board of Trade price plus \$35 per ton.

2. The SSC has not been able to reach its production targets. To be profitable, it would have to reach  $\frac{9}{16}$  of its target level or 12 tons of meal per day. Reaching that production target will require accessing a much larger market which is the main reason for hiring a marketing consultant. Without being profitable, it is difficult to purchase soybeans from members as promised in the agreement. Also, sales are not consistent throughout the year which creates cash flow problems. Better efforts to access additional users as well as stabilize existing markets would help considerably in the profitability of the operations.
3. The importance of an effective manager is paramount. The first manager had to organize the effort, manage the remodeling and rehabilitation process, and identify new markets. In the process, the marketing effort did not receive adequate attention which led to financial difficulties later. A new manager with a background in marketing and production has been hired, and with help from the marketing consultant, financial conditions should improve.

Of special interest is exploring markets for the soybean oil extruded from the process. Crop oil is one product that has been identified. It may be possible to produce oils for human consumption but, while this market could be more lucrative, it would require additional processes that would involve added expense. The local market for crop oils may be limited because operators have established connections with existing distributors. The crop oil market, however, could be profitable and is one that is actively being explored by SSC personnel.

Another market under consideration is the sale of soybean meal for show dogs. The product could be bagged and marketed through a chain. The high fat content of the meal makes animal hair shine which is an attractive feature for show animals. To access this market means bagging the final product which would involve additional costs and, possibly, a second production line. The dog food market, however, could complement the hog and dairy market and help stabilize the cash flow. Dairy operations, especially, do not feed heavily during the summer months which could significantly reduce the demand for soybean meal. It might also be possible to ship the soybean meal in bulk to an existing dog food producer, thereby removing the need for a bagging process aimed at the final user. This option is also being explored by SSC personnel.

Because of the declining crush margin and the revenue shortfalls, SSC is not current on its debt payments. It currently owes \$85,000 on the \$90,000 USDA loan and \$118,000 on the revolving loan application from the Southwest Iowa Coalition. In 1999, it paid neither principal nor interest on this loan. Members have also contributed an additional \$650 each in capital to maintain operations.

Even so, interviews with personnel revealed a positive attitude regarding the future of the enterprise and a basic understanding that the changed market conditions had a very serious impact on the SSC's viability. In hindsight, had management responded differently and more

quickly to events when the operation was beginning, the financial condition might be somewhat different. However, the main factors contributing to the delayed profitability have been the inability to market the soybean meal and oils effectively and the declines in the crush margin. While the former might have been affected by different management personnel and practices, the latter is largely beyond the control of SSC personnel.

### **Lessons Learned and Ways To Proceed**

While the SSC is still not profitable in its second full year of operation, this is not at all uncommon for businesses just starting up. SSC management seems cautiously optimistic at this point and has plans for expanding the market. The initial manager has been replaced, and the operation is producing a high-quality product with a high weight-gain potential for animals.

At this point, one might ask what can be learned by other investors interested in starting comparable ventures. Market fluctuations can never be controlled, or even anticipated, completely. Declines in the crush margin and the consequences for the co-op's profitability are hard to avoid even though the feasibility study highlighted this issue and reported that even slight changes in market conditions could have a serious effect on profits. Perhaps the lesson to be learned from this experience is to raise sufficient capital to weather revenue shortfalls in the early years of operation. Insufficient capital is a problem faced by many, if not most, small businesses in their early years.

The cost of the new machinery for this production process was \$89,450. The relatively soft market currently has made used machinery available. New groups interested in replicating the machinery and equipment in the SSC plant could probably purchase the equipment used. Of course, purchasing used equipment always holds a risk factor of dependability and potentially higher costs of repairs. Indeed, some of the programs financing these operations may impose restrictions regarding dependability of equipment, a requirement to purchase instate, or other consideration that could prevent a purchase of used equipment. Despite potential restrictions, serviceable used equipment can reduce the amount of initial capital needed and could allow funds to be used for market development, management services, and other expenses instead.

Perhaps a more useful lesson to be learned from the experiences of this venture is the importance of identifying and/or establishing markets prior to starting operations. The feasibility study made clear that additional commitments were needed for the business to be profitable. Had the current effort of involving a professional marketing consultant been started earlier, these markets might have made the difference in profitability.

The vertical integration in hog production with greater reliance on established suppliers has been underway for several years, but its impact on the SSC might not have been evident at the start. Once again, the importance of identifying solid markets is key to the profitability of this business, and additional research on market trends might have prevented several lean years in the operation.

Finally, current efforts to identify alternative markets for both soybean oil and meal are key to continued operations. If the dog food and dairy markets for meal materialize, they could

substantially improve the profitability of SSC and help stabilize the markets. A more positive cash flow would allow the manager to work with farm-producers on a regular delivery schedule. The uneven demands for beans makes it difficult for farm producers to know when they will have to deliver soybeans to the plant.

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*by Norman Walzer and Mary Holmes*

Depressed crop prices leading to lower incomes for farm producers across the United States have motivated many groups to organize in an effort to improve the financial conditions for farmers. The numerous approaches that have been attempted typically include finding new markets for current products, sometimes through niche marketing using an identity preservation technique. In other cases, farm producers have tried to reduce operating costs through joint purchasing or marketing efforts. Still, other producers have tried to obtain economies of scale by increasing their size of operation through the purchase or rental of additional land.

The specific approach adopted to increase farm incomes depends partly on historical trends, industry structure, market conditions, and the types of products grown in the region. In the Great Plains and Upper Midwest, producers have had a history of forming cooperatives to lower input costs and market output. Many of these cooperatives were formed in the early 1990s, sometimes to bring better services to rural areas. In some cases, the cooperatives then moved on to provide services beyond their members and even, at times, compete with the membership in service delivery.

The 1990s brought a new type of cooperative movement, which focused on adding value to farm products before they left the producers' control. These arrangements, New Generation Cooperatives (NGCs), are used in raising fruits and vegetables, corn, soybeans, and livestock. They typically are very different in structure and are unique in product and delivery. A common feature, however, is that their mission is to capture a greater share of the profit in the food chain, namely to bring producers a larger share of the profit from raising and delivering agricultural products.

This case study examines an effort in central Iowa to build an NGC based on processing soybeans into soybean meal and oil with the final products destined for animal feed. The NGC has faced difficulties reaching the expected market and at the same time, was limited by a decline in the expected crush margin. In subsequent analyses, we examine approaches used in creating this NGC and try to identify some of the obstacles faced and some of the factors that led to its closing in December 1999.

### **Background<sup>1</sup>**

The Southwest Soy Cooperative (SSC), located in Adams County, Iowa, grew out of the general discontent with soybean market prices and a desire to stabilize farm incomes in 1995. Adams County is a rural area located 30 miles north of the Missouri line and 65 miles east of the Nebraska line. The nearest major markets for soybeans grown in this area include Omaha (80

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<sup>1</sup>Much of this material is based on a feasibility study which was prepared by Jeff Jobe, USDA-RD, Rural Business-Cooperative Specialist, in 1996. That information is supplemented by personal interviews with Ray Gaesser, Roy Parsons, and Ken Pangburn which were conducted in July through December 1999.

miles west), Manning, Iowa (90 miles north) and Des Moines, (110 miles northeast). In addition, other smaller processors were setting up operations in the area surrounding Adams County. Previously, the markets were dominated by large conglomerates.

Against this setting of low prices and somewhat limited markets, the Raw Agricultural Products Committee (RAPC) of the Adams County Economic Development Corporation was created in 1994 to find ways to increase the profit stream from local crops. Several options were considered including raising and cleaning corn to make it food grade, raising horticultural crops, and initiating a large feed lot operation to expand markets for local products. Concerns were raised about some of the problems that had been experienced with large livestock operations, so attention shifted to processing soybeans into cattle or hog feed since livestock is an important industry in the area. For instance, Iowa leads the nation in hog production and is a major exporter of beef. In 1995, the RAPC recommended further exploration of a plant to process soybeans into a meal for animals and into an oil with multiple commercial and industrial uses. In October 1995, the RAPC requested that the U.S. Department of Agriculture-Rural Development (USDA-RD) undertake a feasibility study of this type of business and make recommendations regarding an organizational structure to bring it about with a goal of raising the price of soybeans by \$1.00 per bushel for members.

### **Operational Feasibility**

Undertaking this type of venture involved leadership from five key individuals, including producers and businesses who owned land, with moral and financial support from others in the area. From the start, the venture was seen as a local economic development project, which involved support from local financial institutions as well as producer members. There is a history of co-ops in Iowa and neighboring states such as Wisconsin and Minnesota; however, it was a new experience for those involved in this specific endeavor.

The feasibility study, prepared by Jeff Jobe, demonstrated the potential for profitability of the proposed activity, but it also indicated that the profit margin could be negatively affected by many factors including the crush margin (difference between the price paid for soybeans and the price of soybean meal and oil produced). Likewise, to be profitable, the NGC had to market its output well and reach a specific volume of production. Informed local management was also identified as crucial to the success of this venture. Several sensitivity analyses were undertaken to illustrate the importance of these factors. Elements such as costs of inputs, management structure, and markets are not unique to this endeavor. Virtually any business operating on a relatively slim margin must pay attention to them as well. Because of their importance to others considering this type of effort, some time is spent on each element below.

### **Soybeans as Inputs**

The SSC idea centered on Adams County but also recognized the surrounding seven counties as potential suppliers of soybeans. Building on assets of the region, especially as local inputs, was important to the success of this venture. Approximately 18.7 million bushels of soybeans are produced in Adams County and the surrounding seven counties annually, with 1.8 million bushels produced in Adams County alone according to Jobe's 1996 feasibility study.

Producing soybeans is not the issue; retaining the income on the farm was the bigger question. Jobe estimates that 40 percent of the soybeans in Iowa were exported without further processing. If value is added to the soybeans, it mainly comes from feeding livestock and marketing the animal products. In 1996, Jobe estimated that 68.8 million bushels of soybeans were consumed by livestock as soybean meal, and this meal was processed at 24 existing facilities.

The issue that faced the potential investors in the soybean processing cooperative, then, was how to organize and create a facility that could further process the soybeans and allow farmer-producers to capture a share of the income generated from this processing endeavor. At the same time, if the venture created jobs, residents in nearby communities could gain. It was clear from the beginning, however, that a large number of full-time jobs would not be created in this type of venture. Nevertheless, if the farmer-producers received higher incomes from soybeans produced, the additional income would be spent locally thereby stimulating the economies of surrounding communities. Thus, local business leaders and financial institutions had reason to invest in this type of venture, and, in fact, the venture was supported by both financial institutions and commercial business interests.

### **Structuring the Business Venture**

There are two ways in which farmer-producers in this type of venture could earn additional income. First, they can receive a premium for the grain supplied to the co-op. A premium for producers, of course, means higher input costs to the business venture than would have occurred if the soybeans were purchased on the open market. The premium, however, provides an immediate benefit to co-op members and offers an incentive to join the overall effort.

Second, members of the co-op share in the returns from the enterprise if it makes a profit, or may have to make additional financial contributions if the venture does not meet expectations. Assuming profitability of the co-op, members receive a return on their investment. This return depends on the profits which, in turn, depend on accessing lucrative final markets and keeping the production process as close to the final consumer as possible.

The soybean processing plant uses an Insta-Pro (R) extrusion-expelling process<sup>2</sup> to convert the soybeans into a meal and extract the oil. A detailed description of the precise process is not needed here, but the extruder “generates heat through friction to cook, sterilize, stabilize, texturize, and dehydrate the soybean” (Jobe 1996). The process creates a high-quality animal feed with a high fat content that is readily accepted by animals as a protein supplement.

Extruded-expelled soybean meal contains 45 percent crude protein and 7 percent crude fat. The extruded-expelled meal is produced by an environmentally sound process that does not require solvent extraction of the oil. Through this process, the meal does not assume the bitter taste typically associated with the solvent-extraction process. The meal is a golden color with a low moisture percentage. It is typically used to replace conventional soybean meal and some of

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<sup>2</sup>Manufactured by Insta-Pro International, 10301 Dennis Drive, Des Moines, IA 50322.

the fat in any diet. It is ideal for pig starter where a low level of antinutritional factors are required. It is also an ideal source of the bypass amino acids required for milk production.

A 1994 study conducted at Kansas State University concluded that nutrient digestibilities and availabilities of indispensable amino acids tended to be greatest in extruded soybeans. The Insta-Pro extrusion process was compared with conventional soybean meal and roasted soybean meal.

## **Potential Markets**

Initially, the SSC targeted pork producers as a main market for the soybean meal as a protein supplement. According to Jobe (1996, 12), the soybean meal contains 7 percent fat making it a high energy supplement which represents a 44-46 percent protein supplement. Iowa is number one in the nation in pork production at 5.35 billion pounds of pork processed in 1997.

The intended market radius was approximately 40 miles wide with an expected 500 to 700 potential hog producers. The revised market was 70 to 80 miles from the production point. SSC had a production goal of 400 tons of meal per month and understood that, with recent consolidations of hog production, growth in markets must come from dairy production, and efforts have been directed to those customers. Thus far, in the Midwest, the dairy operations have not followed hog production patterns toward consolidation and vertical integration. However, interviews with SSC personnel demonstrated an understanding of the need to access new high volume and niche markets.

The local market for soybean meal was expected to be substantial. The feasibility study indicated that in the eight counties, including Adams, there was a demand for 61,557 tons of protein supplement per year. Under the expected production targets, the SSC would produce 13,456 tons per year or approximately 21.9 percent of the local demand, with the remaining meal obtained from the closest markets within an 80 mile radius of the processing facility.

In addition to the feed supplement, the soybean process generates a variety of oils for commercial and industrial uses. Potential markets for these products were less well-defined but Kraft Foods in Jacksonville, Illinois (309.4 miles away), and a local feed supplier in the eight-county area were identified in the feasibility study. With additional research and the possible refinement of the oil, it was possible that other industrial markets could be found, but reaching these markets could mean additional processing facilities and higher subsequent costs to the co-op as well. While investors generally recognized these potential markets, they did not aggressively pursue them as part of the initial venture.

To assess local interest in starting a soybean processing venture, the steering committee undertook a survey of farmer-producers in the region. In the winter of 1995, a local media campaign was conducted using newspapers and radio to generate an awareness of the effort and to possibly stimulate interest in becoming involved. A mail questionnaire had been sent to approximately 4,000 residents to determine whether they would be interested in investing in this venture and/or willing to purchase the soybean meal produced to use in their feeding operations. No effort was made to obtain a complete sample of soybean producers in the area; rather, the

intent was only to determine whether a sufficient number of producers were interested in engaging in this venture to make it succeed.

According to the feasibility study, the survey identified a willingness to commit 206,000 bushels of soybeans to the process. Overall, 34 producers completed the surveys, 23 reported being “very interested,” and 10 reported “an interest if more information could be provided.” The 206,000 bushels reported as a possible commitment represented approximately two-thirds of the planned production in the initial year. Thus, it was clear from the outset that additional commitments by farmer-producers would be needed to provide a stable supply of soybeans for this processing plant. Likewise, concern was expressed in the feasibility study regarding the adequacy of the market for the soybean meal (Jobe 1996, p. 11).

In fact, many entrepreneurs experience difficulties accurately accessing the market(s) for their product, and this may be one of the most serious shortcomings in business start-ups, especially those involving farm products. In the past, farmer-producers relied on an extensive marketing system for their products; namely, they delivered grain to a local elevator or river terminal.

Engaging in value-added business, on the other hand, represented a set of entirely different tasks, some of which producers had not had to deal with extensively in the past. Obtaining a commitment from producers to provide the inputs to the soybean processing plant is certainly at the top of the list of tasks that had to be accomplished. Identifying markets to be served also ranked high. Putting together a financial package to make the operations profitable requires skills and familiarity with issues that not all farmer-producers possess.

Organizing the soybean processing activity, therefore, required professional skills in marketing, finance, and production management. This combination of skills was not often found among members of the proposed co-op. Thus, it was essential that a professional manager be hired for the venture, and that decision was made early in the process. Hiring the manager early in the process makes sense because then the manager could assist in organizing the membership drive. As noted later, some difficulties arose with this position that may have delayed the profitability of the enterprise.

To determine interest in joining the proposed venture, 200 surveys were mailed to farmer-producers, of which 130 responses were obtained with 70 indicating an interest in becoming members. A majority of the members purchased one or two shares. The members typically have larger than average farm size. Members had to commit 1,300 bushels of soybeans per share per year, which represents approximately 29 acres of soybeans.

Several approaches could have been used to attract members and participants to the co-op. First, the basic membership should always be made up of the farmer-producers who supply soybeans to the processing plant. Second, it is also possible to structure the co-op to include users of the final product. In this case, it would be pork producers who would receive a return based on the amount of soybean meal purchased. Including the users makes sense because it helps solidify the markets. On the other hand, it can be difficult to attract these members due to

commitments they may already have with suppliers or competition from other purchasing cooperatives with established markets.

In fact, as hog producers increased in size, the industry, became vertically integrated, meaning that many large producers already have sources for purchasing feed. Competing with these markets means that the SSC must establish its product as superior in weight-gaining potential, lower cost, or providing some other advantage. In addition, it must establish a lasting presence as a dependable supplier for users to shift from their existing feed sources. This has proved difficult for SSC for several reasons.

1. The main advantage of the extruder process used by SSC is that animals gain more weight per pound of meal fed than in the case of the feed supplied by competitors. As has been determined through interviews (see footnote 1), local informal tests by producers have documented this fact. The estimated cost savings, based on informal tests, is between \$35 and \$40 per ton gained. However, for these gains to be accepted by a large number of hog producers and cause them to shift from current suppliers independent tests and documentation by an impartial source such as a university were required. These tests were estimated to cost between \$30,000-\$50,000. While funds existed for tests and documentation of innovative productions, it was difficult to make the case that what was done by SSC should be included in the innovative category. These tests are somewhat expensive and as of 1999 remained beyond the means of the SSC in its fledgling operations since 1997.
2. Meeting expected production levels to make the processing plant financially stable requires a specific level of operation. The feasibility study was based on two eight-hour shifts. Reaching this target, required a larger market than the co-op had. The upshot is that financial losses, even though manageable for a while, occurred, weakening the confidence of purchasers that the co-op could survive. At the same time, without the additional volume and markets, it was difficult for the co-op to prove that it could last. In many ways, these difficulties are not unexpected or unusual for a business in its early operations but point out the importance of having adequate financial capital and management in place when the venture begins.

### **Getting Started**

The SSC began operations in 1997 as a closed co-op organized under Chapter 501 of the Iowa Code. Selection of a co-op style of business was mainly for the following reasons:

(1) Iowa statutes limit the size of corporations to a maximum of 35 investors; since the intent was to work with a larger number of farmer-producers in the soybean processing plant, an alternative organizational structure was needed, and (2) co-ops provide tax advantages over limited liability corporations.

The SSC started with 70 members in 1997, and the number has declined to 58 in 1999. Each member contributed \$1,500 at the beginning plus a commitment of 1,300 bushels of soybeans to be delivered to the processing plant annually. Operating losses forced a call for an additional

infusion of funds in 1999. It took between 18 and 24 months to go from the start of discussions to the actual formation of the co-op. SSC was managed by a five-person board of directors, each serving a three-year term. The terms were staggered so that each year approximately the same number of members are elected.

While initial plans called for a location in the Bluegrass Industrial Park in Corning, Iowa, an alternative site was found in a vacant elevator that already contained storage facilities. An arrangement was made with the owner to rent the facilities for \$3,500—essentially the cost of storage fees for the soybeans—but the SSC had to rehabilitate the building for use and this rehabilitation project was more expensive (\$100,000) than had been budgeted (\$40,000). The high cost of rehabilitating the building, in turn, drained the funds for alternative uses such as market development or professional staff. The SSC also worked with utilities to obtain a reduction of 5 to 6 percent in utility costs.

### **Financial Structure**

In order to meet its anticipated capitalization needs of \$530,000, the SSC was financed through several funding sources (**Table 1**):

1. Members contributed a total of \$200,000 in cash from sales of 128 shares to 70 members in 1997. This represented approximately 40 percent of the total financing. Because of operating losses in 1998 and expected losses in 1999, each member was required to contribute an additional \$650. In some instances, participants decided not to continue their membership and forfeited their initial investment.
2. The SSC borrowed \$140,000 through a revolving loan fund from the Southwest Iowa Coalition at 5 percent interest. This was a ten-year loan and demonstrates the participation of local economic development groups working with private businesses to stimulate the local economy.
3. The USDA-RD loaned the SSC \$90,000 at 8.5 percent for 15 years under the Direct Business and Industry Loan program. This is a federal program designed to create additional jobs in distressed areas. It provides a source of needed funds for many business start-ups.
4. Iowa has a Rural Economic Value-Added Mentoring Program (REVAMP) to assist in creating value-added businesses and to help provide jobs in rural areas. The SSC obtained two grants through this program totaling \$25,000. The first grant was for \$16,500. These funds were used to pay the Small Business Development Center for developing the Business Plan, and the balance was used for legal costs incurred in the development of the organization. A second grant for \$8,500 was used to hire a professional consultant to work on a marketing plan.
5. The Iowa Farm Bureau and the Iowa Soybean Board each contributed \$10,000. These funds were used to retain a marketing and sales consultant to work with the SSC.

6. USDA-RD's Cooperative Service staff in Iowa provided technical assistance by preparing the feasibility study. This is an in-kind contribution provided at no cost to the SSC. Feasibility studies by private consultants often run upwards of \$40,000 to \$50,000. In addition, several grants of \$1,000 and more were provided by local agencies as part of the start-up endeavor.

**Table 1. Financial Structure**

<i>Source</i>	<i>Amount</i>	<i>Percent of Total</i>
Sales of Shares to Membership	\$200,000	40
Southwest Iowa Coalition Loan	\$140,000	26
USDA-RD Direct Business & Industry Loan	\$90,000	17
REVAMP Grant 1	\$16,500	3
REVAMP Grant 2	\$8,500	2
Iowa Farm Bureau Donation	\$10,000	2
Iowa Soybean Board Donation	\$10,000	2
In-kind TA & Misc. Small Grants by Local Agencies	\$55,000	8
<b>Total</b>	<b>\$530,000</b>	<b>100</b>

*Source:* Southwest Soy Cooperative, 1999.

There were three types of capital stock in the SSC. Only one share of the first type of capital stock, *common stock*, could be held by a shareholder at a cost of \$100 per share; no dividends were paid on common stock.

*Class A Preferred Stock*, was used to determine the number of bushels of soybeans that members are expected to provide to the venture. This stock could be transferred between members with the understanding that no member can hold more than 15 shares of this type. No dividends were paid on this stock, and shareholders did not have voting rights on co-op decisions.

*Class B Preferred Stock*, the third type, was issued and redeemed at \$1 per share. Holders of this stock had no voting rights and the stock paid no dividends. This stock was not actually purchased. When a co-op has margins, the margins are distributed to the members based on their participation in the co-op in the fiscal year. In this case, it is the amount of beans delivered and processed by the co-op. The producer's percentage of the net margins are partially paid in cash (by law, the minimum amount paid must be 20 percent), with the balance retained by the co-op. The producer at this point is issued *Class B Preferred Stock* in an amount equal to what was retained by the co-op. At some point in the future, the board of directors would make the decision as to the oldest outstanding year of stock.

A philosophical issue facing most, if not all, NGCs is the amount of earnings to be distributed to members. On one hand, retaining a large portion of earnings in some ways defeats the purpose of the co-op since it is intended to increase the incomes of members; however, expanding operations and replacing equipment requires that the co-op have access to capital. Over the long-term, these investments may pay the largest dividends for members. The SSC bylaws (2.4C) require that the co-op distributes "all net savings attributable to member business"

remaining after *Class B Preferred Stock* allocations have been made. Allocations of net savings can be made in cash or in *Class B Preferred Stock* at the discretion of the board of directors.

### Financial Operations

Since it began in 1997, the SSC operations have not met financial expectations. In 1998, it suffered a loss of approximately \$64,000 and was expected to lose between \$18,000 and \$25,000 (including interest payments) in 1999. In December, 1999, the SSC closed.

The following three factors accounted for most of the financial difficulties experienced by the SSC:

1. The crush margin at the outset was expected to continue at approximately \$1.18 per bushel of soybean meal. Even at this level, the margin was fairly tight; unfortunately, the crush margin dropped to \$1.13 and then to as low as \$.13 as the price of soybean meal dropped more quickly than the price of soybeans. The feasibility study made clear that changes in the margin could make the venture unprofitable (see **Table 2**).

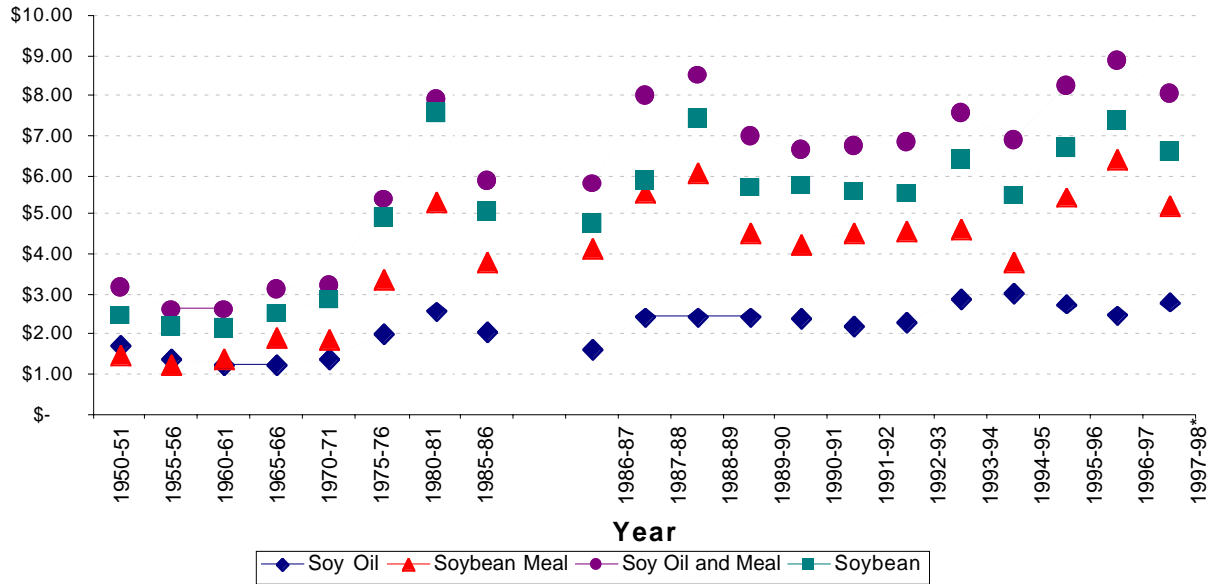
**Table 2. U.S. Soybean Products: Value and Crush Margin per Bushel, 1950-1998**

Year beginning September	Value of Products per Bushel			Soybean Price Rec'd by Farmers (dollars)	Margin Rec'd by Farmers (dollars)
	Soy Oil Value (dollars)	Meal Value (dollars)	Total Value (dollars)		
1950-1951	1.74	1.48	3.22	2.47	0.75
1955-1956	1.39	1.24	2.63	2.22	0.41
1960-1961	1.23	1.41	2.64	2.13	0.51
1965-1966	1.26	1.91	3.17	2.54	0.63
1970-1971	1.38	1.88	3.26	2.85	0.41
1975-1976	2.02	3.40	5.42	4.92	0.50
1980-1981	2.58	5.32	7.90	7.57	0.33
1985-1986	2.06	3.84	5.90	5.05	0.90
1986-1987	1.65	4.15	5.80	4.78	1.02
1987-1988	2.44	5.54	7.98	5.88	2.10
1988-1989	2.42	6.08	8.50	7.42	1.08
1989-1990	2.44	4.53	6.97	5.69	1.28
1990-1991	2.39	4.28	6.67	5.74	0.93
1991-1992	2.20	4.53	6.73	5.58	1.15
1992-1993	2.28	4.58	6.86	5.56	1.30
1993-1994	2.91	4.64	7.55	6.40	1.15
1994-1995	3.07	3.83	6.90	5.48	1.42
1995-1996	2.78	5.44	8.21	6.72	1.49
1996-1997	2.47	6.41	8.88	7.35	1.53
1997-1998*	2.81	5.23	8.04	6.58	1.46

\*Through March 1998

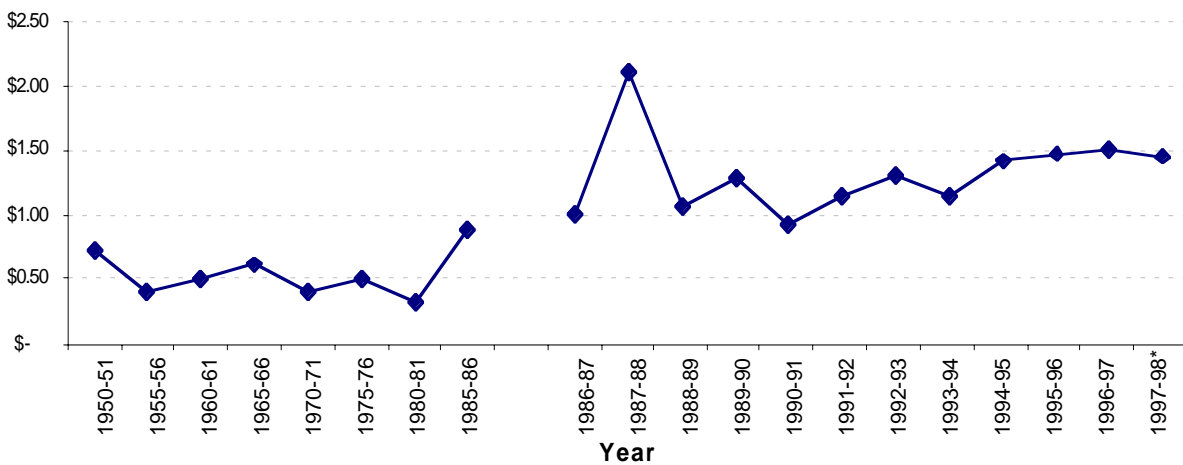
Source: USDA Economic Research Service, May 1998.

**Figure 1. Value of Soybeans and Products per Bushel**



\*Note: in both Figures, the year (x axis) changes from five-year intervals (1950-1985) to one-year intervals (1986-1997); the break in the lines indicates the change.

**Figure 2. Margin Received by Farmers per Bushel**



\*Because Census reports crush and production quarterly, yields of meal and oil will be adjusted quarterly.

Source: 1999 Soya & Oilseed Bluebook: The Annual Directory of the World Oilseed Industry. 1999. Bar Harbor, ME: Soyatech, Inc., p. 363.

Currently, producers are paid the Board of Trade price minus \$.35 per bushel to allow for the nearby basis. Producers will be paid within two days of delivery. The meal produced is sold at the Board of Trade price plus \$35 per ton.

2. The SSC has not been able to reach its production targets. To be profitable, it would have to reach  $\frac{9}{16}$  of its target level or 12 tons of meal per day. Reaching that production target required accessing a much larger market which was the main reason for hiring a marketing consultant. Without being profitable, it was difficult to purchase soybeans from members as promised in the agreement. Also, sales were not consistent throughout the year creating cash flow problems. Better efforts to access additional users as well as stabilize existing markets would have helped considerably to make the operation profitable.
3. The importance of an effective manager is paramount. The first manager had to organize the effort, manage the remodeling and rehabilitation process, and identify new markets. In the process, the marketing effort did not receive adequate attention leading to financial difficulties later. A new manager with a background in marketing and production was hired, and with help from the marketing consultant, financial conditions were expected to improve.

Of special interest is exploring markets for the soybean oil extruded from the process. Crop oil is one product that was identified. It may be possible to produce oils for human consumption but, while this market could be more lucrative, it would require additional processes that would involve added expense. The local market for crop oils may be limited because operators have established connections with existing distributors. The crop oil market, however, could be profitable and was actively explored by SSC personnel.

Another market under consideration was the sale of soybean meal for show dogs. The product could be bagged and marketed through a chain. The high fat content of the meal makes animal hair shine which is an attractive feature for show animals. Accessing this market meant bagging the final product which would have involved additional costs and, possibly, a second production line. The dog food market, however, could have complemented the hog and dairy market and helped stabilize the cash flow. Dairy operations, especially, do not feed heavily during the summer months which could have significantly reduced the demand for soybean meal. It might also have been possible to ship the soybean meal in bulk to an existing dog food producer, thereby removing the need for a bagging process aimed at the final user. This option was explored by SSC personnel.

Because of the declining crush margin and the revenue shortfalls, SSC fell behind in its debt payments. In 1999 it owed \$85,000 on the \$90,000 USDA loan and \$118,000 on the revolving loan application from the Southwest Iowa Coalition. In 1999, it paid neither principal nor interest on this loan. Members have also contributed an additional \$650 each in capital to maintain operations.

Interviews with personnel in 1999 revealed a positive attitude regarding the future of the enterprise and a basic understanding that the changed market conditions had a very serious

impact on the SSC's viability. In hindsight, had management responded differently and more quickly to events when the operation was beginning, the financial condition might have been somewhat different. However, the main factors contributing to the delayed profitability include the inability to market the soybean meal and oils effectively and the declines in the crush margin. While the former might have been affected by different management personnel and practices, the latter is largely beyond the control of SSC personnel.

### **Lessons Learned and Ways To Proceed**

While the SSC was not profitable in its second full year of operation, this is not at all uncommon for businesses just starting up. SSC management was cautiously optimistic and planned to expand the market. The initial manager was replaced, and the operation produced a high-quality product with a high weight-gain potential for animals.

At this point, one might ask what can be learned by other investors interested in starting comparable ventures. Market fluctuations can never be controlled, or even anticipated, completely. Declines in the crush margin and the consequences for the co-op's profitability are hard to avoid even though the feasibility study highlighted this issue and reported that even slight changes in market conditions could have a serious effect on profits. Perhaps the lesson to be learned from this experience is to raise sufficient capital to weather revenue shortfalls in the early years of operation. Insufficient capital is a problem faced by many, if not most, small businesses in their early years.

The cost of the new machinery for this production process was \$89,450. The relatively soft market made used machinery available. New groups interested in replicating the machinery and equipment in the SSC plant could probably purchase used equipment. Of course, purchasing used equipment always holds a risk factor of dependability and potentially higher costs of repairs. Indeed, some of the programs financing these operations may impose restrictions regarding dependability of equipment, a requirement to purchase in state, or other considerations that could prevent purchase of used equipment. Despite potential restrictions, serviceable used equipment can reduce the amount of initial capital needed and could allow funds to be used for market development, management services, and other expenses instead.

Perhaps a more useful lesson to be learned from the experiences of this venture is the importance of identifying and/or establishing markets prior to starting operations. The feasibility study made clear that additional commitments were needed for the business to be profitable. Had the current effort of involving a professional marketing consultant started earlier, these markets might have made the difference in profitability.

The vertical integration in hog production with greater reliance on established suppliers has been underway for several years, but its impact on the SSC might not have been evident at the start. Once again, the importance of identifying solid markets is key to the profitability of this business, and additional research on market trends might have prevented several lean years in the operation.

Finally, efforts to identify alternative markets for both soybean oil and meal were key to continued operations. If the dog food and dairy markets for meal had materialized, they could have substantially improved the profitability of SSC and helped stabilize the markets. A more positive cash flow would have allowed the manager to work with farm-producers on a regular delivery schedule. The uneven demands for beans made it difficult for farm producers to know when they would have to deliver soybeans to the plant.

### **Summary**

The experiences of the Southwest Iowa Soy Cooperative are not necessarily unique. NGCs involve significant risks, especially in changing market conditions. While it is easy to second guess past actions, several factors were important. The inability to capture enough market to reach efficient size is a problem for any starting business. Not only accurately assessing the market but also obtaining the commitments prior to the project is important.

This venture made the importance of raising sufficient capital early in the project very clear. Starting an enterprise often encounters unexpected costs or cost overruns, construction or otherwise and, especially in small ventures, adequate start-up capital may be insufficient to handle these expenses. In fact, this is a common issue facing small businesses.

In a New Generation Cooperative, gaining and retaining the commitment of member producers is key to success. If there is a long time before financial success, producers can become impatient and/or lose interest. Fortunately, the losses experienced by members were mainly limited to the initial investment. The board of directors, of course, also made a major time commitment to the project and experienced considerable frustration as they tried to make the venture work.