



*Sign at the SMAC Plant, Bingham Lake, MN*

## ***Southwest Minnesota Agrifuels Cooperative***

A Case Study

Prepared for the North Central Initiative for Small Farm Profitability  
By the University of Wisconsin Center for Cooperatives  
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## Introduction

This case study is one of four in a series that are focused on so-called “new generation cooperatives,” or NGCs. While the first recognized NGC dates back to 1972, most were formed in the 1990s, and they continue to be formed today.

NGCs differ from traditional cooperatives in several ways. First, farmers invest significant dollars up front by purchasing shares in the business.

Second, each purchased share allows and obligates a producer to deliver a set quantity of raw product to the co-op.

Third, there are a limited number of shares, and in that sense the co-op is closed or limited to a set number of producers. This is intended to match incoming raw products to the capacity of the plant and the demand for the end product.

Finally, the ownership shares can be traded among farmers, and the price of those shares may rise or fall, reflecting how much the farmers expect to benefit from their membership in the future.

## Industry Profile

The ethanol industry has been highly successful over the past several years. Since 1980, U.S. ethanol production has grown about 12 percent per year. It reached 1.63 billion gallons in 2000, an industry record and an increase of 10.8% from 1999, according to the Renewable Fuels Association.

At the time SMAC was formed, six new ethanol plants were under construction and 38 additional plants were scheduled to begin construction. Growth in ethanol output has been fueled by low corn prices (see Appendix A) as well as Support from state and federal government programs.

### Southwest Minnesota Agrifuels Cooperative

Southwest Minnesota Agrifuels Cooperative (SMAC) is a new generation cooperative that was formed to add value to its members’ corn production. Today, SMAC is the majority owner of a dry mill fuel ethanol company called Ethanol2000, located in Bingham Lake, Minnesota (95 miles east of

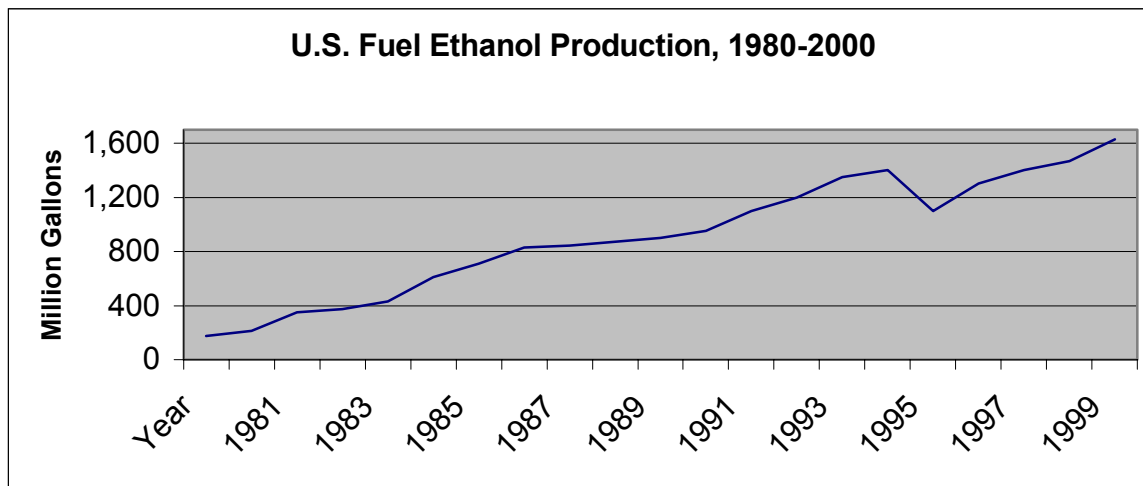
“The vast majority of the 1.5 billion gallons of ethanol produced in the U.S. is produced from corn. Over 40 percent of the U.S. ethanol output is produced in the state of Illinois, followed by 30 percent in Iowa. The remaining 30 percent is produced primarily in Minnesota and Nebraska. Ethanol has increased the average value of corn from between \$0.14 per bushel to \$0.25 per bushel, as well as generating millions of dollars in capital expenditure and thousands of new jobs. As of April 2001, the average price received by farmers for corn is \$1.91 per bushel.”

--Ethanol Industry Outlook 2001

Sioux Falls, South Dakota.)

This study is based primarily on a site visit and interviews with the SMAC manager and members in the spring of 2001, seven years after the co-op was first organized in May 1994.

Of the fourteen ethanol plants in Minnesota, twelve operate as new generation cooperatives. Among these



Source: Ethanol Industry Outlook 2001 Clean Air, Clean Water, Clean Fuel, Renewable Fuels Association

twelve, Ethanol2000 is one of the leading producers, with a capacity of 28 million gallons per year (see Appendix B).

The initial idea to establish SMAC began in February 1994 when the Windom Ethanol Committee decided to form an ethanol cooperative. The committee contacted the Doherty, Rumble, and Butler law firm for legal advice and to begin a feasibility study. The feasibility study was completed one month later in March 1994.

The initial equity drive began in August 1994 with 15 organized meetings for member sign ups. A total of 12,000 direct mail advertising brochures were mailed to prospective members. To join the cooperative, members were required to purchase a minimum of 5,000 shares of stock at \$2.00 per share for a total minimum investment of \$10,000. Members were also obligated to deliver one bushel of corn per share to the plant annually. Initially, an October 1994 deadline was set for membership sign-up, which was later extended.

According to a board member, "SMAC was forced to look for a partner after six months of failing on its own." SMAC members then met with Broin Enterprises on March 6, 1995. An engineering firm specializing in ethanol technologies, Broin was also looking for partners at the time.

On March 22, 1995, SMAC chose Broin as the design engineers for the construction of the ethanol plant. One year later, SMAC entered into a limited liability partnership with Broin

and Ethanol2000 was created. SMAC owns 64.1% majority and Broin Enterprises owns 35.9%.

Construction of the plant began in May 1996 and was



*SMAC plant, Bingham Lake, MN*

completed in June 1997. The total cost of constructing the ethanol plant was \$17.5 million, which includes the cost of the developed land.

In addition to the construction cost, Ethanol2000 required \$1.5 million for start up and operating cost. The total project cost was \$19 million. In July 1997, the first full month of production, Ethanol2000 was already profitable.

In March 1999, the existing plant was expanded from 11.5 to 27.5 million gallons per year. Through sales of ethanol and its main byproduct (distiller's



*Broin Project manager (left) and SMAC General Manager Dennis Frederickson (right)*

grain), SMAC generated enough profit to capitalize the \$15 million expansion without selling more shares.

More recently, construction of a carbon dioxide compression

plant was completed in February 2001 and is now in operation.

This plant serves as a third income stream for Ethanol2000. This plant, which cost \$3.2 million to build, has the capacity to produce 240 tons per day of liquid carbon dioxide that is 99.999% pure.

For the complete construction timeline, see Appendix C. For the co-op's year 2000 balance sheet and income statements, see Appendices D and E.

### **Impact on Co-op Members**

SMAC's members have benefited financially in three ways. First, there is the dividend, or patronage refund, that is paid out at the end of a profitable year. In recent years, this dividend has averaged over a dollar per bushel premium on top of the market rate that they are paid for their corn upon delivery.

## Cooperative Make-Up

SMAC's average member farms between 500 and 600 acres. A SMAC representative classified their membership as follows:

| Classification | Total Acres Farmed | Percent of Total Membership |
|----------------|--------------------|-----------------------------|
| Small-sized    | 240 – 320          | 5%                          |
| Medium-sized   | 321 – 2,000        | 90%                         |
| Large-sized    | +2,000             | 5%                          |

The SMAC board has also chosen to retain a portion of the annual profits to invest in expansion and pay off debt. These retained earnings are allocated to members, thereby increasing their equity investment. The goal is to return this retained equity to members on a seven-year rotating cycle.

A third way that SMAC members have benefited financially is in the appreciation of stock. Based on the trade value of individual stock (\$5.60 in the spring of 2001), the total value of member stock had increased from roughly \$4 million at start-up to over \$11 million in the spring of 2001.

At the original price of \$2 per share, the first SMAC members invested an average of \$16,549, with investments ranging from \$10,000 to \$120,000 per member.

When asked about the impact on small- and medium-sized farmers, one SMAC board member said that smaller farmers have the potential to benefit the greatest because they often commit a greater proportion of their crop to the co-op.

For a medium sized member like Craig Bennett, the cooperative has brought very

positive returns. In total, Bennett farms 1,000 acres, 250 acres of his own land and 750 of his father-in-law's farm. Bennett estimates that he delivers 60 percent of his corn production to the co-op.

Bennett joined the co-op in the beginning, believing that participation would bring him a premium. He was also interested in the idea of ethanol production. He decided to purchase the minimum 5,000 shares (\$10,000 investment) because he felt that was the maximum he could afford at the time.

Bennett partially financed his investment through a loan from his local bank, which covered approximately 30 to 40 percent of his cost. Initially, his bank was hesitant to make the loan given the level of risk involved. However, once Bennett got the backing of the Minnesota Department of Agriculture's Rural Finance



*SMAC Annual Meeting*

Authority, the bank approved the financing.

Bennett noted that timing is very important to joining a new generation co-op and that the "only option [for small farmers] is to get in on the ground floor." As the value of the stock rises over time, it makes it more challenging for small farmers to invest.

Overall, Bennett has been pleased with his participation in SMAC. Today, his shares are worth almost three times the original price. For anyone interested in joining a new generation co-op, Bennett recommends that they "do their homework," noting that he would not have joined without knowing the people involved and attending the membership meetings, because "it is a risk, not a sure thing."

In contrast to Jim Bennett, Jim Smith is one of SMAC's largest farmers and shareholders. He farms a total of 2,300 acres and owns 60,000 shares in the coop. Smith has also been a member since the beginning. When asked about his goals for joining SMAC, he said he saw an opportunity to add value to his production. He also believed participation in the co-op offered an investment opportunity and a source of

income. Smith raised funds for this investment through a loan guarantee program.

During the first two years of the cooperative, when dividends were low, Smith thought about selling. But he believed that eventually the dividends and the value of the shares would increase. Overall, Smith has been pleased with his participation in SMAC and noted that he is glad the co-op did not seek outside investors during its expansion.

### **Lessons Learned**

According to one board member, SMAC's uniqueness is that "the board of directors has a lot of authority, they do not have to go to membership" for every decision. For example, the \$15 million expansion investment decision was made without going to co-op members.

Another SMAC board member believes that the their

plant is "the most aggressive ethanol plant in Minnesota," and that they offer their members a higher level of return on shares than most other ethanol co-ops. In their opinion, SMAC is "one of the most efficient in the industry."

When asked what, if anything, they would do differently, a SMAC board member replied, "we wished more farmers would have invested in the beginning. It was a tough go at that time. Timing was very important. Initially we were selling shares when corn prices were high, so there was less incentive for farmers to join."

Several SMAC representatives indicated that their partnership with Broin is key to their success and helped to reduce many of the co-op's risks. For example, Broin will experiment with new technology at their private plants. If it proves to be successful, they

will then move the technology into the plant it owns with SMAC.

Another benefit from the Broin partnership is access to new markets. One on-going challenge for SMAC is marketing. By partnering with Broin, SMAC can also take advantage of that company's marketing expertise. In fact, SMAC pays Broin a percent of its net profits to manage the co-op's marketing.

SMAC board members' advice to other farmers who are contemplating an ethanol start-up: don't be afraid to partner with someone.

They also added that it's important to convey to new members that the cooperative's primary goal is to produce ethanol. Members needed to share the goal of "changing from commodity farmers to energy farmers."



*SMAC Board of Directors*

## References

*GTEC Ethanol Plant Case Study*

*Outlook for Biomass Ethanol Production and Demand*

SMAC Website

Minnesota Office of the Legislative Auditor Ethanol Programs Summary

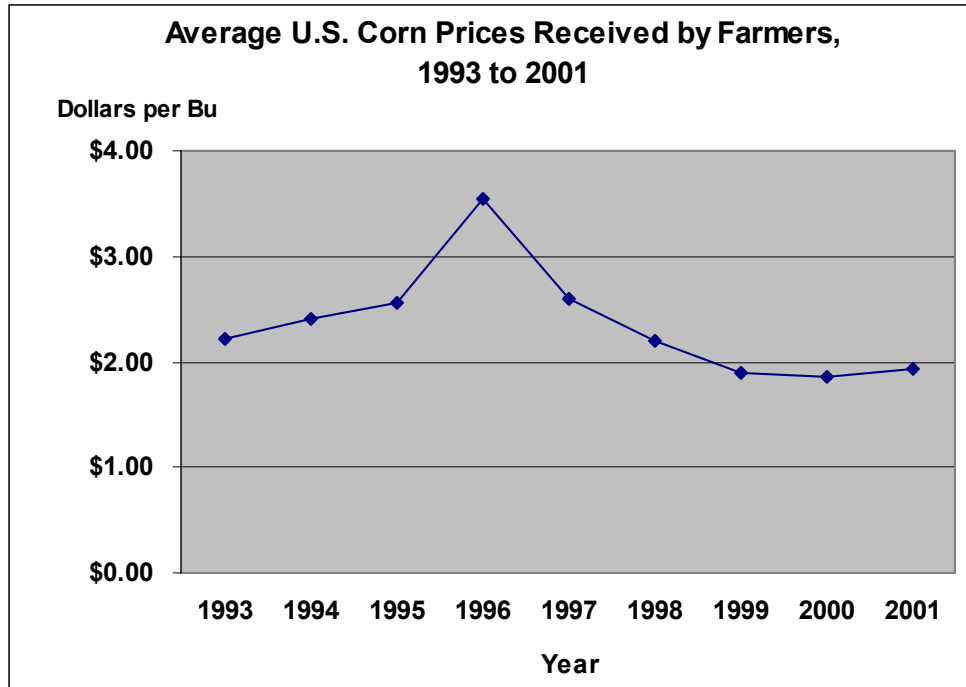
DiPardo, Joseph, *Outlook for Biomass Ethanol Production and Demand*, Energy Information Administration.

Personal interviews with SMAC members, board of directors and general manager (3/29/01)

*Ethanol output sets records in 2000*, Milling & Baking News, 79(51): 20, February 13, 2001

*Ethanol Industry Outlook 2001 Clean Air, Clean Water, Clean Fuel*, Renewable Fuels Association

## Appendix A: Average Corn Prices, 1993 to 2001



Source: National Agricultural Statistics Service, USDA  
(<http://www.usda.gov/nass/aggraphs/pricecn.htm>)

## Appendix B: Ethanol Plants & Capacities

| City & (plant name)                 | Capacity<br>gl/yr | Bushel<br>corn/year | Start-<br>up year | # of<br>Members |
|-------------------------------------|-------------------|---------------------|-------------------|-----------------|
| Bingham Lake (Ethanol2000)          | 28 million        | 10.4 million        | 1997              | 244             |
| Marshall (MCP)                      | 30 million        | 11.0 million *      | 1988              | 4,000           |
| Morris (DENCO)                      | 15 million        | 5.5 million         | 1991              | 300             |
| Winnebago (Corn Plus)               | 20 million        | 7.4 million         | 1994              | 650             |
| Winthrop (Heartland)                | 17 million        | 6.3 million         | 1995              | 502             |
| Benson (CVEC)                       | 19 million        | 7.0 million         | 1996              | 650             |
| Claremont (Al-Corn)                 | 17 million        | 6.3 million         | 1996              | 358             |
| Buffalo Lake (MN Energy)            | 12 million        | 4.4 million         | 1997              | 325             |
| Preston (Pro-Corn)                  | 18 million        | 6.6 million         | 1998              | 170             |
| Luverne (Corn-er Stone)             | 17 million        | 6.3 million         | 1998              | 201             |
| Little Falls (CMEC)                 | 18 million        | 6.7 million         | 1999              | 854             |
| Albert Lea (Exol/Agri<br>Resources) | 17 million        | 6.3 million         | 1999              | 496             |
| St. Paul (Gopher State Ethanol)     | 15 million        | 5.6 million         | 1999              | private         |
| <b>TOTAL</b>                        | <b>245.6 mm</b>   | <b>89.8 million</b> |                   | <b>8,750</b>    |

## Appendix C: Ethanol Plant Construction Timeline

### SOUTHWEST MINNESOTA AGRIFUELS COOPERATIVE ETHANOL PLANT CONSTRUCTION TIMELINE

|                    |   |
|--------------------|---|
| February 24, 1994  | Windom Ethanol Committee decides to form an Ethanol Cooperative, contacts Doherty Rumble and Butler law firm for legal advice and orders a feasibility study.   |
| March 10, 1994     | Feasibility Report Completed – Feasible but many problems to face.  |
| March 15, 1994     | Name of Cooperative (Southwest Minnesota Agrifuels Cooperative) reserved by Department of State   |
| May 10, 1994       | Articles of Incorporation and By-laws filed by the Secretary of State for Minnesota. First Board of Directors (five members) elected and authorized to sign documents.  |
| May 12, 1994       | Doherty Rumble and Butler hired to draft Disclosure statement, Membership Agreement, Subscription agreement and Marketing Agreement.  |
| July 7, 1994       | Letter of Intent signed with Design Engineers for 15 million gallon per year ethanol plant.   |
| August 25, 1994    | Preliminary meeting with potential lenders. Banker informational meetings set for August 30 and 31. Co-op manager, Dennis Frederickson hired on contract to start work August 29 <sup>th</sup> . First 15 meetings organized for member sign ups. \$2.00 per share, 5000 minimum and October 15, 1994 deadline set for sign-up. |
| September 15, 1994 | Co-op elevator board meetings arranged for 7 county area surrounding potential site. Share sale action plan discussed and adopted. Sign-up deadline extended to November 30, 1998.  |
| October 20, 1994   | Site selection committee identifies three potential sites. Construction contract sent for legal review.   |
| November 3, 1994   | 12,000 direct mail advertising brochures mailed. Options on three properties in process.  |
| November 17, 1994  | Six additional informational meetings will be held before December 1 <sup>st</sup> .  |
| December 1, 1994   | Accounting firm of Schetzle, Carlson & Company from New Ulm appointed as auditors.  |
| January 3, 1995    | Three additional meetings set. Research on tax increment finance commenced.   |
| January 6, 1995    | Price of shares to be raised to \$2.10 on February 24, 1995. Test wells to be drilled on all the property under option.   |
| January 12, 1995   | Final deadline for membership changed to “a date to be named by the board at a later time.” Possibility of joint venture with other Co-ops discussed.   |

|                   |   |
|-------------------|---|
| February 16, 1995 | Decision made to terminate relationship with design engineer. Long-term finance discussed with CoBank. Test wells not good.                                     |
| March 1, 1995     | Meet with St. Paul Bank for Cooperatives.   |
| March 6, 1995     | Option obtained on a more desirable piece of property. Meeting with Broin Enterprises regarding possible partnership.   |
| March 22, 1995    | Broin & Associates chosen as design engineers. Site selection finalized.  |
| June 1, 1995      | Coop elevators no longer interested in investing. CoBank loses interest as well as a result.  |
| June 15, 1995     | Limited Liability Partnership with Broin Enterprises being developed. Plant design dropped to 11.5 million gallons per year. New business plan being developed. |
| June 26, 1995     | Completed business plan accepted.   |
| July 13, 1995     | Negotiations open with local banking consortium on source of subordinated debt.   |
| August 3, 1995    | Draft partnership agreement discussed. Negotiations reopened with CoBank, Omaha. Tax increment finance being worked on.   |
| October 5, 1995   | Natural gas, water and electricity supply finalized.  |
| November 30, 1995 | Additional shares offered at \$2.10 to existing members.  |
| December 20, 1995 | More shares offered at \$2.20 per share with January 12, 1996 deadline.   |
| January 16, 1996  | Minnesota Pollution Control Agency permitting process started.  |
| February 26, 1996 | Three SMAC members elected to partnership management committee.   |
| March 13, 1996    | CoBank loan approved subject to Farm Credit Services participation.   |
| March 18, 1996    | Partnership agreement signed – ETHANOL2000 created.   |
| March 29, 1996    | All finance agreed to except tax increment finance.   |
| April 11, 1996    | Option exercised on plant site. Tax increment finance approved by County.   |
| May 10, 1996      | All loan agreements approved and signed.  |
| May 18, 1996      | Ground breaking ceremony.   |
| May 20, 1996      | Construction starts on \$19,000,000.00, 11 ½ million gallon per year ethanol plant owned 64.1% by SMAC and 35.9% by Broin Enterprises, Inc.                     |
| March 15, 1997    | Larry Ward starts as General Manager of ETHANOL2000.  |

|                 |   |
|-----------------|---|
| June 14, 1997   | Open House for new ethanol plant.   |
| June 16, 1997   | Plant starts production.  |
| July, 1997      | First full month of operation is profitable. Nameplate capacity reached.                  |
| October 1, 1998 | Plant production for July, August, September quarter exceeds 15 million gallons per year. |

**Appendix D: SMAC Balance Sheet, 1999-2000**

| <b>SOUTHWEST MINNESOTA AGRIFUELS COOPERATIVE</b>  |                  |                  |
|---|------------------|------------------|
| <b>BALANCE SHEET</b>  |                  |                  |
| <b>December 31, 2000 and 1999</b>   |                  |                  |
| <b>ASSET</b>  | <b>2000</b>      | <b>1999</b>      |
| <b>CURRENT ASSETS</b>   |                  |                  |
| Cash  | 38,303           | 41,313           |
| <b>PROPERTY AND EQUIPMENT</b>   |                  |                  |
| Office equipment  | 6,522            | 6,522            |
| Accumulated depreciation  | (4,433)          | (3,475)          |
|   | 2,089            | 3,047            |
| <b>INVESTMENT IN ETHANOL2000, LLP</b>   | 8,034,194        | 5,759,383        |
| <b>TOTAL ASSETS</b>   | <b>8,074,586</b> | <b>5,803,743</b> |
| <b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>   |                  |                  |
| <b>CURRENT LIABILITIES</b>  |                  |                  |
| Accrued payroll taxes   | 1,355            | 597              |
| <b>STOCKHOLDERS' EQUITY</b>   |                  |                  |
| Common stock, \$2 par value, 30,000,000 shares<br>authorized 2,019,000 issued and outstanding | 4,038,000        | 4,038,000        |
| Preferred stock, \$1,000 par value, 5,000 shares<br>authorized with none outstanding          | -                | -                |
| Additional paid-in capital  | 97,050           | 97,050           |
| Unallocated captial reserve   | 3,938,181        | 1,668,096        |
|   | 8,073,231        | 5,803,146        |
| <b>TOTAL LIABILITIES AND STOCKHOLDER'S EQUITY</b>   | <b>8,074,586</b> | <b>5,803,743</b> |

Appendix E: SMAC Income Statements, 1999-2000

| <b>SOUTHWEST MINNESOTA AGRIFUELS COOPERATIVE</b>   |                     |                   |
|--|---------------------|-------------------|
| <b>STATEMENTS OF INCOME</b>                        |                     |                   |
| <b>Years Ended December 31, 2000 and 1999</b>      |                     |                   |
|  | <b>2000</b>         | <b>1999</b>       |
| <b>OPERATING EXPENSES</b>                          |                     |                   |
| Wages  | 43,333              | 40,000            |
| Professional fees                                  | 4,424               | 4,582             |
| Payroll taxes                                      | 4,150               | 4,427             |
| Supplies   | 2,484               | 2,032             |
| Repairs and maintenance                            | 2,089               | 44                |
| Telephone  | 1,872               | 1,498             |
| Director fees                                      | 1,350               | 800               |
| Insurance  | 5,672               | 2,334             |
| Advertising  | 3,560               | 3,861             |
| Travel   | 3,210               | 3,575             |
| Depreciation                                       | 958                 | 958               |
| Amortization                                       | 0                   | 70,063            |
| Licenses and dues                                  | 330                 | 675               |
|  | 73,432              | 134,849           |
| <b>LOSS FROM OPERATIONS</b>                        | <b>(73,432)</b>     | <b>(134,849)</b>  |
| <b>INVESTMENT EARNINGS FROM ETHANOL2000, LLP</b>   |                     |                   |
| Total Ethanol2000, LLP earnings                    | 7,336,058           | 2,084,477         |
| Minority interest in subsidiary's earnings (48.7%) |                     |                   |
| (20% Broin Management Fee + 28% Broin Enterprise)  | (3,574,127)         | (1,015,557)       |
| SMAC's share of earnings                           | 3,761,931           | 1,068,920         |
| <b>INTEREST INCOME</b>                             | <b>1,527</b>        | <b>1,035</b>      |
| <b>NET INCOME</b>                                  | <b>\$ 3,690,026</b> | <b>\$ 935,106</b> |