ASSESSING AND COMPARING THE BUSINESS ENVIRONMENT FOR PRODUCER INVOLVEMENT IN FURTHER VALUE-ADDED PROCESSING IN THE U.S. AND ONTARIO

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Ontario Corn Producers’ Association

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Executive Summary

This study was undertaken in an effort to compare business environment factors that exist in Ontario and the U.S. with respect to producer involvement in value-added processing. Corn producers recognize the need to add value to their bulk commodity and move up the value chain in order to bring more money back to the farm operation.

Value-adding is the process of changing a raw material or product into something that is more valuable to the customer and they would be willing to pay a higher price for. There are many different ways of adding value and can range from a simple undertaking to something complex and capital intensive. Some examples of value-adding include: processing a raw material into a new product i.e processing corn into ethanol; marketing two products together i.e. lettuce and salad dressing; and providing a commodity that has a special trait or size.

Some of the highlights of the study are provided below.

1. Business Environment Factors

There are several factors in the business environment that companies must consider. First, the internal business environment reflects how their products are positioned in the marketplace, what competitors are doing, the effect of government policy on the company and so on. In the end profit potential drives many decisions.

Secondly, companies must think about external influences such as exchange rates, interest rates, and government stability locally and internationally. These factors can also affect the profitability of a business particularly if the enterprise relies on other countries for raw materials or if they plan to export the final product.

2. The Ethanol Industry

Knowledge of ethanol production has existed for many years but the oil crisis in the 1970s encouraged some countries, particularly Brazil and to a lesser extent the U.S., to decrease reliance on foreign oil by increasing ethanol production. Many countries are now increasing ethanol production to decrease their reliance on foreign oil and produce a fuel that is viewed as more environmentally friendly.

Brazil is the largest producer of ethanol at 15.3 billion litres in 2004 followed by the U.S. at 13.9 billion. Canada produced only about 245 million litres in 2004. The U.S. adopted a Renewable Fuels Standard during the summer of 2005 that will result in 28.4 billion litres (i.e. 7.5 billion U.S. gallons) of ethanol produced by 2012. Canada also plans to significantly increase production to 1.4 billion litres by 2010 through the Ethanol Expansion Plan.
3. **The Minnesota Model**

A study trip to Minnesota showed that producers have a very supportive environment for value-added processing. In particular, many corn producers are owners of one or even several ethanol plants. The success of these plants was attributed to the following:

- an ethanol mandate that exists in Minnesota provides a market for ethanol (currently 10% of all gasoline sales must be ethanol and it is expected to be 20% within the next 7 years);
- state production incentives of $US 0.20/gallon for up to 15 million gallons per plant per year for ten years (i.e. $US 3 million);
- state loan programs of up to $US 500,000 to help get a plant established;
- USDA value-added producer grant program specifically for farmer owned or controlled ventures to help with feasibility studies, business plans, marketing plans and operating costs;
- USDA loan guarantee in amounts up to $25 million ($40 million if the business is a co-op) that provides security to lenders; and
- a network of core people who have the reputation to make it all happen. This group consists of key farmers/investors that drive the project, bankers and lawyers that have experience in ethanol financing and setting up farmer owned ethanol plants and government personnel at the USDA and state level that have knowledge of the various programs and application processes.

4. **U.S. Business Structures**

It was indicated that the co-operative structure operates as a pooling system by bringing together people and resources such as corn and money. A co-op has securities advantage in that less formal filings are required, it has a single level of taxation, and earnings are returned to patrons in proportion to patronage. A disadvantage is an 8% maximum return limit on benefits.

An LLC structure is treated as a partnership from a tax perspective and therefore has some tax benefits. The focus in this structure is on income going back to the owners, to minimize tax with more net money getting into the hands of the owners. There is no securities advantage and full filing with the Securities and Exchange Commission is required. In an LLC there is no limitation of benefits as there is in a co-op. Some LLCs have class A shares which may require delivery of corn and class B shares with no delivery requirement.

A unique business structure is called the 308B which is a hybrid between an LLC and a co-op. It is taxed like a partnership but has no securities advantages. The 308B allows non-patron capital to share in the benefits. It is very similar to an LLC but can be more complicated to set up. A corporation is a growth model where money is retained in order to grow the company. The shares are expected to increase in value and a corporation is subjected to double taxation.
5. **Value-Adding in Canada and Ontario**

The Government of Canada has targeted some funding assistance to new and increased ethanol production by providing about $118 million to eleven projects. Some loan assistance is provided for co-operatives through FIMCLA (up to $3 million) and grants (up to $25,000) for conducting feasibility studies or business plans are also available through the Planning and Assessment for Value-added Enterprises program.

In Ontario, the Ethanol Growth Fund will provide capital assistance in the form of loan guarantees or grants for new or expanding ethanol production. An operating grant may also be available that is designed to help plants manage fluctuating corn and ethanol markets. The grant is based on a formula that takes into account the price of corn, oil and ethanol and will vary each year from $0.00 to $0.11/litre.

6. **Canada Business Structures**

Farmers in Ontario that want to undertake value-added processing would most likely select either the co-operative or private corporation business structure. Both have advantages and disadvantages. A co-op must file an offering statement and a key requirement is that members must supply product to the co-op or purchase goods or services from the co-op. Member shares remain constant in value. The transferal of shares is at the discretion of the board and redemption of shares may be difficult if there is inadequate cash flow. Members can receive patronage dividends based on the amount and type of business each did with the co-op. These dividends are taxed as income in the hands of the member.

Shareholders of a private corporation do not have the requirement to use or supply the company. A private corporation does not require an offering statement and transferal of shares is not usually restricted. The value of common shares in a private corporation fluctuates depending on the financial success of the company. After-tax profits are distributed as dividends based on the number of shares owned by each shareholder.

7. **Summary Points/Key Findings**

Briefly, the summary points from this study are as follows:

(i) With respect to adding value to corn, the production of ethanol appears to be a viable route that is being undertaken in many U.S. states. However, in order for producers to reap any significant benefit from this activity, they must be investors in the co-op or company that generates the ethanol or any other value-added activity. This was stated to the authors by all Minnesota industry stakeholders.
(ii) Ethanol plants do have a significant economic multiplier effect on local communities. U.S. statistics show that a 40 million gall/year plant generates a total economic impact of more than $100 million with over 500 indirect and induced jobs created. Typically, a plant this size employs 35 full-time employees on a payroll of $1.8 million once the plant is fully operational.

(iii) Based on the Minnesota experience there are some important ingredients needed to create the business environment necessary for a successful ethanol industry and they are: the area must have surplus corn production relative to demand; the government needs to create policy that mandates ethanol use; the development of supportive government programs to assist producer value-added activities (i.e. grants for business plan development, loan guarantees, production incentives, and etc.); and savvy producer entrepreneurs willing to risk their capital.

(iv) There are several critical success factors in getting a producer owned ethanol plant operational and they include: vision, co-operation and commitment. Beyond this there is a need to hire outside professional help to generate the required business plan and operational strategy. Significant time must be invested in hiring experienced staff that are used to operating an ethanol plant. These criteria would carry over to any value-added activity.

(v) Unlike Minnesota, Ontario is not in a corn surplus position. Feed & industrial usage currently exceed corn production resulting in the need to import corn from the U.S. A plentiful supply of inexpensive corn is critical for success in ethanol production. It is cheaper to transport ethanol than bulky corn.

(vi) With respect to ethanol production in Ontario, while the province has created a mandate for the product (i.e. 5% of all gasoline sales by 2007) the province has some of the other success factors missing. These factors would include not being corn surplus (i.e. Ontario only produces 78% of corn use) and the government programs are modest in comparison to those found in the state of Minnesota.

(vii) Other business environment factors (i.e. interest rates, labour rates, and government stability) are thought to be comparable between the two jurisdictions. While the common business structures used in Ontario are co-ops and corporations and in Minnesota they are co-ops and LLCs, it was found that there are advantages and disadvantages to each and there is not one clearly better suited than the next for producer value-added projects. The LLC structure, however, may be more flexible for large projects (i.e. ethanol plants where it is difficult to raise the necessary capital).
7.1 Conclusion

Benefits can accrue to agricultural producers that have ownership in value-adding activities if a supportive environment exists. Ontario needs to adopt a Minnesota-type model. This model incorporates a mandate or market for ethanol and encourages business structures that allow farmers and outside investors to invest together especially when the project requires a substantial amount of capital. Also, the Minnesota model provides consistent production incentives over the long term (i.e. $US 0.20/gallon of ethanol). Finally, through the USDA, funding is available specifically for farmer initiatives under the value-added producer grant program and substantial loan guarantees are also available. Together, these factors provide assurances to lenders of producer-owned value-adding businesses.

7.1.1 Recommendations

(i) Some value-added projects such as ethanol plants could potentially cost $60 to $100 million. A $25,000 grant to help with the cost of a feasibility study or business plan, while helpful, does not go far in providing support to a project of this magnitude. A more realistic amount would be $100,000 especially given the size of some value-added projects. The Ruminant Slaughter Facility Assessment Assistance program does provide this level of funding but it is not available for other agricultural value-adding projects. Also recall in the U.S., producers are eligible for up to $US 150,000 in startup operating funds.

(ii) Long-term Production Incentives – Consistent long-term levels of funding based on production are needed. A stable production incentive that does not fluctuate and is offered over the long term (i.e. 10 years) would show commitment to the industry. This type of funding would allow plants to be guaranteed a certain amount of income that could help guard against fluctuating prices or in profitable years it could be used to pay down debt quicker. This type of funding is also beneficial in securing financing.

(iii) Government Loan Guarantees – Loan guarantees provide a critical piece of the financial puzzle when producer-owned value-added businesses seek debt financing. Loan guarantees show that the government is committed to an industry or a project over the long term. If the lender sees that the farmer-owners are prepared to invest in the business and the government is prepared to guarantee a percentage of the loan amount then there is less risk for the lender. The risk for the lender and the government is also reduced if an unbiased reliable third party has conducted the business plan and the marketing plan is realistic.

Loan guarantees however, need to be in amounts that will be helpful to value-added projects. Value-adding projects can cost anywhere from a few thousand dollars to $100 million or more. A maximum loan guarantee
of for example, $3 million will not be much help if the project requires $50 million in debt financing. If higher loan guarantees are available for farmer-owned projects this will encourage farmer-owned value-adding.

An application process could help the government identify projects that meet the criteria for key initiatives and determine the level of risk associated with each project. The actual cost to government for loan guarantees should be fairly small if applicants provide viable third-party prepared business and marketing plans as part of the application process. The possibility of default should be reduced.

(iv) Business Structure – The creation of a business structure such as the Limited Liability Company (LLC) in the U.S. should be considered in Canada. This structure has some characteristics of a co-op in that farmers can purchase membership shares which are tied to delivery rights and they can also purchase other types of shares that would provide them with an opportunity to earn a return on their investment. As well, the LLC structure is flexible enough to allow outside investors to invest money in a value-added project and earn a competitive return on their money. This can substantially increase the amount of equity raised for a project and will become increasingly important as the size of these value-added ventures grows.

Government has taken a good first step and deserves some acknowledgement for entering into and stimulating ethanol production, but for Ontario producers to benefit there needs to be further steps taken to increase rural jobs, and improve the rural economy. Ironically, in Ontario, big business has led the way and producers have been left behind whereas, in Minnesota, producers led the way.

In summary, the role of government is to provide a supportive environment for producer-owned value-adding. Specifically targeting funding assistance to producer-owned or controlled businesses will get more money into the hands of farmers and at the same time will improve the rural economy. Creation of a business structure that encourages farmer ownership and delivery and at the same time allows non-farmers to participate solely as investors will help these value-added businesses get the equity they need.
1.0 Introduction

There has been much written about the movement from “traditional” agriculture to the “new” agri-food system. At the production level, there is general consensus that farms will gravitate toward one of two production structures. The first type of production structure will be similar to many current farms in that undifferentiated commodity products will continue to be produced. Only low-cost producers will survive in this sector. Technological change will continue to decrease real commodity prices. The desire of producers to maintain living standards comparable to non-farm peers will force those remaining in this sector to operate farms, on average, larger than is currently the case. The second category of producers will produce differentiated, identity preserved products that focus on certain product attributes and consumer demands. The ability to negotiate contracts, manage risk, and use information technology will be essential for the production of differentiated products.

If the poultry industry is used to speculate about the future of various production sectors, then a highly coordinated system is likely where there are no breaks in the information flow between various components (i.e. input suppliers, producers, processors, and retailers). It is anticipated that as agriculture moves into production to specifications, producers will be faced with lower per unit margins but the variability in profitability will remain large which will maintain the unusually high income to risk relationship.

The combination of agricultural industrialization, trade liberalization, information technology, decoupled farm programs, environmental concerns, and consumer demands for food quality, safety, convenience, and nutrition will lead to unprecedented change in the agricultural production and food processing and distribution sectors. Successful farm operations are likely to be those that develop strategies which allow them to survive and prosper in this changing environment.

Given this industry trend towards production units of two sizes, there is a desire by some producers to move up the value chain in order to return more profits to their farming operations. However, in order for producers to do this they must find a way to add value to their bulk commodity (e.g. processing corn into ethanol).

There are many examples of value-adding in agriculture and one is The Michigan Sugar Company. This co-operative of sugarbeet growers from Michigan and Ontario completed the purchase from the Imperial Sugar Company in 2002. There are now approximately 1,300 members in the co-op. They add value to their sugarbeets by owning the processing facilities where the beets are converted into sugar.

Another example is in Oklahoma where a co-operative of wheat producers owns a frozen dough processing facility. Value-added Partners Inc. was formed in 1999.
as a way of adding value to members’ wheat. Frozen pizza crust was the first product but the business now has several products including puffed pastry, baguettes and cinnamon rolls. Value-added Partners Inc. also owns a trucking company to transport their product1.

There are several farmer-owned ethanol plants in the U.S.. These businesses started when corn producers wanted to add value to their corn. Some of the U.S. farmer-owned plants include the following: Badger State Ethanol, LLC; Heartland Corn Products; Husker Ag, LLC; and Siouxland Energy & Livestock Co-op. In Ontario, Seaway Valley Farmers Energy Co-operative Inc. and Integrated Grain Processors Co-operative Inc. are two farmer-owned co-operatives that plan to build ethanol production facilities.

Selecting a business structure for the value-added business to operate under is a critical part of the process. It is important because it determines: who can be part of the business; what the membership or ownership requirements are to be; how profits are to be distributed; what possible liability the owners may have; what the potential tax implications are; and etc..

The co-operative business structure has existed in Canada for many decades and has been used by producers as a way to increase purchasing or marketing power. Co-operatives are found in many industries including agriculture, finance, grocery and utilities. Table 1.1 shows the top Canadian and U.S. co-operatives ranked by total revenues for 2003. All of the Canadian co-ops and the first, second and fourth U.S. co-ops are involved in agriculture. The remaining two U.S. co-ops are in the grocery industry. It is very evident that the co-ops in the U.S. are considerably larger in terms of revenue than the Canadian co-ops (i.e. the top 5 U.S. firms gross more revenue than Canada’s largest co-operative).

1 Sally Vielma, Sweet Smell of Success, Rural Co-operative Magazine, Value-added Corner, USDA, November/December 2003
Table 1.1. Top Canadian and U.S. Co-operatives, 2003*

<table>
<thead>
<tr>
<th>Canada1</th>
<th>Total Revenue (Million)</th>
<th>United States</th>
<th>Total Revenue (Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Federated Co-operatives Limited</td>
<td>$3,568</td>
<td>1. CHS Inc.</td>
<td>$9,393</td>
</tr>
<tr>
<td>2. Co-opérative fédérée de Québec</td>
<td>2,768</td>
<td>2. Dairy Farmers of America</td>
<td>6,933</td>
</tr>
<tr>
<td>3. Agropur</td>
<td>1,910</td>
<td>3. Wakefern Food Corp.</td>
<td>6,580</td>
</tr>
<tr>
<td>4. Saskatchewan Wheat Pool</td>
<td>1,430</td>
<td>4. Land O'Lakes Inc</td>
<td>6,269</td>
</tr>
<tr>
<td>5. United Farmers of Alberta</td>
<td>948</td>
<td>5. TOPCO Associates LLC</td>
<td>4,600</td>
</tr>
</tbody>
</table>

* Ranked by total revenue; ¹ Non-financial co-operatives

Source: Government of Canada, Co-operatives Secretariat, Top 50 Canadian Co-operatives 2003; National Co-operative Bank Top 100 Co-ops

Another popular business structure in U.S. agriculture is the limited liability company (LLC). The LLC permits the involvement of outside investors who are not involved in agriculture to participate in the project by supplying capital. This business structure is not available in Ontario.

In the U.S., producer-owned value-added processing, especially ethanol production, has appeared to be very successful in some regions of the country given the proliferation of ethanol plants in recent years. This growth has caused Ontario corn farmers to wonder: What type of government support does the U.S. ethanol industry receive? Ontario farmers realize the importance of moving up the value chain and want to understand the business environment their U.S. counterparts operate in.

This study seeks to identify and provide a better understanding of business structures commonly used by U.S. farmer-owned value-added businesses. It is important to understand the advantages and disadvantages of various U.S. business structures with respect to membership requirements, profit distribution, taxation policies and transferal of shares. Discussion will focus primarily on the co-operative and Limited Liability Company (LLC) business structures.

Further, it is speculated that in the U.S. there is significantly more government support for producer-owned value-added businesses. In order to determine if this is true, it is necessary to identify what programs are available and how much money is potentially available for projects.
1.1 Study Objectives

Specifically, the objectives of the study were to:

i) Determine under which situations a co-operative business structure is better suited than a limited liability company. This will include a comparison of the membership requirements, profit distribution, shareholder liability and taxation responsibilities.

ii) Describe the Minnesota experience in value-adding and in particular focus on those that are producer owned. This will include an investigation of ethanol production in Minnesota.

iii) Catalogue and describe U.S. government support and tax programs that may influence producer participation in value-adding.

iv) Provide recommendations on possible ways government could provide a supportive business environment for producer-owned value-added processing in Ontario.

1.2 Methodology

In order to gain a basic understanding of producer-owned value-adding in the U.S. an internet search was undertaken. Emphasis was placed on corn value-adding and the primary result was ethanol production. Much of this report is based on producer-owned ethanol plants because there is a lot of information available on the topic and ethanol fits well with corn production. Large quantities of corn are needed to satisfy the requirements of even moderate sized ethanol plants.

An information-seeking trip to Minnesota was planned and undertaken. Minnesota was identified as a place to visit for a number of reasons. These reasons include: a) Minnesota typically has the lowest price for corn in the U.S.; b) the state is supportive of producer-owned value-adding; c) the state has several ethanol plants; d) the majority of the ethanol plants are producer-owned; and e) Minnesota has an aggressive ethanol mandate.

The intent of the trip was to gather information regarding the business environment for producer-owned value-adding in Minnesota. Emphasis was placed on learning about Federal and State programs related to agricultural value-adding and ethanol, business structure characteristics and ethanol production. The following organizations or agencies were contacted:

(i) Lindquist and Vennum law firm - this law firm has expertise in agribusiness organization, financing and renewable energy.
(ii) Stearns Bank - this bank has experience lending to farmer-owned ethanol plants.

(iii) Producer – this producer has helped start and has ownership in several farmer-owned ethanol plants and other value-added agricultural businesses throughout the U.S..

(iv) USDA Rural Development Department - this department has three programs that are designed to provide assistance to rural or producer-owned businesses.

(v) Minnesota Department of Agriculture - Minnesota has programs and initiatives that have been very supportive of ethanol production and producer-owned value-adding.

(vi) University of Minnesota, Department of Applied Economics - researchers in this department focus on agricultural energy production and business organization.

It should be noted that the information provided in this document is not an exhaustive listing of all programs and regulations applicable to producer value-adding. Programs and regulations change frequently and this report should be used as a general discussion document.
2.0 A Description of Value Chains and The Business Environment

This section describes and defines value chains and identifies the various components of the business environment in which companies operate.

2.1 The Value Chain and Value-Adding

In many companies there are processes whereby a raw material is processed or changed into a final product that is then distributed to the customer. This process is comprised of many separate but inter-related stages which include the actual receiving of the raw materials, processing, transporting the product, marketing and customer service. These stages are the primary activities in the ‘value chain’ shown in Figure 1.1. It was developed by Michael Porter in his book Competitive Advantage. It is called a value chain because at each stage of the chain the value of the product increases.

Figure 2.1. Value Chain Activities

![Primary Value Chain Activities Diagram](source)

![Secondary Value Chain Activities](source)

There are also secondary value chain activities that are crucial in supporting the primary activities. These activities include the ability to source raw materials, the technology used in the value-adding process, human resources, and the infrastructure of the business (i.e. structure and culture of the business).

Companies normally do not function completely independently. Typically, they rely on their suppliers for quality inputs delivered in a timely fashion. They also rely on their customers to purchase their product. There may be additional players involved in getting the final product to the end consumer (i.e. trucking companies, further processors, and etc.). This involvement and co-operation among
companies to convert raw materials into a finished product is also referred to as a value chain.

Businesses within a value chain may co-operate and co-ordinate their efforts somewhat based on contractual obligations related to quality of product or timing of delivery but there are sometimes feelings of distrust among the players. This is particularly true with respect to profitability. Most businesses are reluctant to share information with the next player in the chain even though this could potentially be beneficial to the end consumer if lower prices are the result.

In agriculture this lack of trust, combined with low commodity prices and the belief that the next player in the value chain is capturing a larger share of the retail dollar, prompts many producers to consider value-added processing.

What is agricultural value-adding? In simple terms value-adding occurs when a producer receives more money for the “processed” product than if it were sold as a commodity. As the farmers’ share of the retail dollar continues to decline there has been considerably more focus on finding ways to add value to agricultural commodities in an attempt to get more money to producers. In Canada for example, the “Compare the Share” report showed that although the retail prices of farm products have increased during the past twenty years, and sometimes significantly, the prices received by farmers have not increased as much².

There are many ways to add value in agriculture. Five methods are outlined below³.

i) **Change the state of the product** – This is a commonly understood form of value-adding whereby a commodity is processed into a completely different product. An example of this is processing corn into ethanol. There are several ethanol plants in the U.S. that were started by groups of farmers that wanted to add value to their corn and did this by investing in, and building, ethanol plants. Another example is when hog farmers own a plant that processes their pigs. Both of these examples provide the farmers with the opportunity to move further up the value chain.

ii) **Commodity with a special quality** – Being able to provide a commodity or product with a special quality may allow a farmer to benefit from a higher price. This could be, for example, white food-grade corn grown for use in the production of tortillas.

iii) Bundling of products – Adding value in this way involves the marketing of two or more commodities or products together. This can be accomplished in many ways such as a salad mixture with a dressing included. Bundling products brings multiple producers together and increases the value of their products.

iv) Commodity that increases efficiencies for customers – When producers grow a new variety of a commodity that increases the speed of processing the processors would be more likely to pay a higher price. An example of this is a tomato that has a skin that comes off more readily during processing than other varieties.

v) Reducing transaction costs – Reducing transaction costs is accomplished when a group of small producers agree to market their commodity as a group. This means that a larger amount of the commodity is available to a buyer and the buyer may pay a higher price than if he had to go to each producer individually.

Although there are various ways to add value to agricultural commodities there are risks associated with doing so. The easy part may be thinking of the value-added end result. Some of the risks include technology, regulations, capital investment requirements and size of market. Using an existing technology may be less risky than using a new technology because there will be people that know how to install it, operate it, and maintain it. When producing a food product there will be many regulations to be aware of. If the value-adding business is not aware of all of the regulations and permits or licenses required the product may never make it to the retail level. Some of these regulations will cover the processing and labeling of the product.

Capital investment requirements will vary depending on the size and scope of the value-added project. Getting a group of producers together to collectively market their commodity is much less capital intensive than building an ethanol plant worth many millions of dollars. It is also important to assess the market for the value-added product. This involves determining who the buyer of the product will be and how much product they can/will purchase. In the end, the amount of risk undertaken should be proportionate to the benefits received – the producer should be rewarded for the risks associated with the value-adding activity.

2.2 Business Environment

The business environment that a company operates in is typically very dynamic and complex. It is possible, however, to break it down into three steps⁴. These are shown in Figure 2.2. Within each step there are multiple variables to

consider. Step 1 is important because it defines the problem, issue or goal. For example, in the corn industry this could be the desire to undertake a processing activity, such as ethanol production, with the goal of increasing returns to the farm by adding value to corn.

Figure 2.2. Business Environment Analysis

Step 2 takes information learned in Step 1 and begins to examine the business environment at a more in-depth level. There are four variables within this step. They are reported separately but it is possible that information learned in analysing one variable will affect some or all of the other variables.

First is the demand or market for the product (Fry, Killing, 1986). It is important to understand what customers need or want and then to determine how fast this market might grow and to what size it could grow. This will be affected by what price the customer is willing to pay.

Second, a company must consider the actions of its competitors (Fry, Killing, 1986). The business must answer questions such as: Will the product be easily copied by competitors?; Will competition be based solely on price?; and Are there other companies that supply a similar product?

Third, companies may compete for supplies and resources particularly if the amount of the resource is limited (Fry, Killing, 1986). This includes not just raw materials. It also includes human resources or the people that have the knowledge necessary for the business. Other resources are technology, infrastructure and capital. A business that is in a relatively new industry or that is using a new technology will have more difficulty accessing capital. Also, a business that must compete with other companies for raw materials may end up paying a higher price in order to secure the materials needed.

Fourth, government policy plays a key role in the business environment. There will be rules and regulations that must be adhered to (Fry, Killing, 1986). This
may mean only certain types of entities can sell the product or only certain processes can be used in the production of the product. As well, there may be government programs to encourage businesses to participate in particular industries or to produce specific products.

Step 3 focuses on basic competitive requirements and the potential for profit (Fry, Killing, 1986). Part of this is to identify how the company or product is different from others in both the way a product is marketed to customers and the methods used by the company to compete for the resources listed above. Being able to do a better job at marketing or in securing resources will increase the potential for profit.

A discussion of factors that exist in the external business environment is now undertaken. These factors are often beyond the control of the business but can affect profitability.

### 2.2.1 Ability to Access Capital

The ability to access capital to build an ethanol plant in Ontario or the U.S. will be similar. Lenders will require the same information regardless of their location. For example, they will need to see business and marketing plans and they will also want to know where the plant will be sourcing corn from and who will be buying the ethanol. However, where there will be differences between Ontario and the U.S. is with respect to government programs. The U.S. government provides significant loan guarantees and some states offer long-term production incentives or capital assistance programs which are not offered in Ontario. These programs offer security to lenders in the U.S.. As well, the U.S. has had much more experience lending to ethanol plants and this may make it easier for U.S. plants to access capital.

### 2.2.2 Interest Rates

Interest rates are important in the business environment. High interest rates result in larger payments on debt which may stress the cash flow. Canadian and U.S. rates since 1995 are shown in Figure 2.3. From 2002 until 2004 in the U.S. the Federal Funds Rate was less than 2%. This rate is what banks charge each other for using Federal funds. The Bank of Canada rate during this time was slightly higher ranging from 2.25% to 3.5%. The Canadian Bank Rate is the rate that the Bank of Canada lends to banks and other financial institutions. The rates in the past 3 years in both countries have been quite low and favourable for capital investments. Although these rates are the lowest recorded in the last eleven years the U.S. interest rates were still more favourable and were about 2.25% lower in the summer of 2003. During 2005 however, the U.S. rate has been slightly higher than the Canadian rate and the U.S. rate has increased more than 2.5% since June
2004. If the rates continue to increase investment may start to slow a bit as it becomes more expensive to borrow money.

**Figure 2.3. Canada & U.S. Interest Rates Over Time**

![Graph showing Canada and U.S. interest rates over time](image)

Source: Bank of Canada, Federal Reserve Board

### 2.2.3 Exchange Rate

The Canada/U.S. exchange rate since 1995 is shown in Figure 2.4. This graph shows how much it would cost, in Canadian dollars, to purchase one U.S. dollar. The Canadian dollar is currently at its strongest value during the time period displayed relative to the U.S. dollar. The strong dollar negatively impacts those companies or industries that export product because it makes the products more expensive and therefore, less competitive. As well, locally produced commodities such as corn are cheaper. Ontario corn prices are based on the U.S. price for corn and then converted to a Canadian price after accounting for the exchange rate. Due to the stronger dollar Ontario corn prices are lower than if the Canadian dollar was weaker. An example of this follows. For simplicity sake this example only serves to show the effect the exchange rate would have on the U.S. price of corn when converted to a Canadian value. It does not take into account local supply and demand conditions, transportation or other components of basis.

Assume the price of U.S. corn is $US1.95/bu. If the exchange rate is $US1.00 = $C1.50, then $US1.95 x 1.50 = $C2.93. If the exchange rate is $US1.00 = $C1.18, then $US1.95 x 1.18 = $C2.30.

This example shows that when the Canadian dollar is strong (i.e. $1.18) the local price in Ontario is lower than if the Canadian dollar is weak (i.e. $1.50).
Companies that rely on imported raw materials, however, pay less when the Canadian dollar is strong, as is currently the situation.

**Figure 2.4. Canada/U.S. Exchange Rate Over Time**

Labour rates and the availability of skilled labour are important considerations in the business environment for an ethanol plant. In the U.S. there will be better access to people who have the skills needed to manage an ethanol plant simply because there are many more ethanol plants in the U.S. when compared to Canada. An ethanol plant requires individuals with various skill-sets and some of these include: specialists in hedging and other risk management techniques; chemists and engineers that have the experience to manage enzyme and yeast activity; electricians, and etc..

With respect to actual labour rates, a report prepared for Natural Resources Canada stated that labour costs at Canadian ethanol plants are lower than those in the U.S.\(^5\). In fact, the report stated that U.S. labour costs would be approximately $0.026 to $0.035/litre Canadian including benefits while Canadian labour would

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cost $0.009 to $0.0135/litre excluding benefits. A University of Minnesota study on ethanol production used a value of $US0.045/gallon for labour and $US0.0136/gallon for management and quality control. Using a conversion factor of 1 US gallon equals 3.785 litres and with an exchange rate of $C1.18 equals $US1.00 the labour cost is approximately $C.0183/litre and is close to the Canadian labour cost reported.

2.2.5 Government Stability

Government stability in the U.S. and Canada is fairly similar due to the knowledge that the governments that are in place normally govern for a certain length of time. This results in some level of governing consistency for each country. Regardless, it is not uncommon for either country to have some issues confronting them that may bring some amount of political instability. For example, currently Canada has a minority government and in the U.S. there are concerns over the war in Iraq.

In conclusion, this study will not focus on all areas of the business environment for producer value-adding in the U.S. and Ontario. Instead, much of the report will centre on government policy, in particular on regulations regarding business structure and government programs that provide financial assistance to producer value-adding businesses.

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3.0 Background on Minnesota and Ontario Corn Production

It is important to provide a quick overview of corn production in Minnesota because it sets the stage for why the state has taken such an interest in ethanol production.

In general, Minnesota has been experiencing many of the same trends in production agriculture as Ontario, for example farm number consolidation. Farms with $500,000 or more in sales (i.e. larger farms) have increased in number while small and medium size farms, those reporting sales between $10,000 and $249,999 have steadily decreased in number. The average farm size was 346 acres in Minnesota in 2004.

The major crops produced in Minnesota are corn, soybeans, spring wheat and sugar beets. In 2004, Minnesota ranked fourth in the United States in terms of corn production with about 7 million acres harvested. Iowa, Illinois and Nebraska were the top three corn producing states. Table 3.1 shows a comparison of recent corn production information for Minnesota and Ontario. Ontario corn production is roughly 20% of Minnesota’s production. This is due not only to the higher number of corn acres but also to the considerably higher yields achieved in Minnesota.

With respect to U.S. corn prices, Minnesota has often been one of the lowest corn priced states. Price data from 1980 to 2002 showed that Minnesota recorded the lowest average price in 18 of the 23 years. During that time frame Minnesota averaged $0.20/bushel lower than Illinois and $0.14/bushel lower than the U.S. average price. Low corn prices helped set the stage for ethanol production in Minnesota because it was a way to add value to the corn. There are now 14

Table 3.1. Minnesota versus Ontario Corn Production Over Time

<table>
<thead>
<tr>
<th>Crop Year</th>
<th>Harvested Acreage ('000 ac)</th>
<th>Yield/ac (bu/ac)</th>
<th>Production ('000 bu)</th>
<th>Harvested Acreage ('000 ac)</th>
<th>Yield/ac (bu/ac)</th>
<th>Production ('000 bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>6,600</td>
<td>150</td>
<td>990,000</td>
<td>1,800</td>
<td>128.3</td>
<td>231,000</td>
</tr>
<tr>
<td>2000</td>
<td>6,650</td>
<td>145</td>
<td>964,250</td>
<td>1,725</td>
<td>105.2</td>
<td>181,500</td>
</tr>
<tr>
<td>2001</td>
<td>6,200</td>
<td>130</td>
<td>806,000</td>
<td>1,960</td>
<td>103.1</td>
<td>202,000</td>
</tr>
<tr>
<td>2002</td>
<td>6,700</td>
<td>157</td>
<td>1,051,900</td>
<td>1,910</td>
<td>113.1</td>
<td>216,000</td>
</tr>
<tr>
<td>2003</td>
<td>6,650</td>
<td>146</td>
<td>970,900</td>
<td>1,725</td>
<td>127.0</td>
<td>219,000</td>
</tr>
<tr>
<td>2004</td>
<td>7,050</td>
<td>159</td>
<td>1,120,950</td>
<td>1,600</td>
<td>131.3</td>
<td>210,000</td>
</tr>
<tr>
<td>2005*</td>
<td>6,800</td>
<td>160</td>
<td>1,090,000</td>
<td>1,565</td>
<td>124.6</td>
<td>195,000</td>
</tr>
</tbody>
</table>

Source: USDA, NASS and Minnesota Department of Agriculture, OMAF; *projected

With respect to U.S. corn prices, Minnesota has often been one of the lowest corn priced states. Price data from 1980 to 2002 showed that Minnesota recorded the lowest average price in 18 of the 23 years. During that time frame Minnesota averaged $0.20/bushel lower than Illinois and $0.14/bushel lower than the U.S. average price. Low corn prices helped set the stage for ethanol production in Minnesota because it was a way to add value to the corn. There are now 14

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7 USDA, NASS, 2005 Minnesota Agricultural Statistics, p.4.
8 Ibid., p.2.
9 Minnesota Department of Agriculture, Economic Impact of the Ethanol Industry in Minnesota, May 2003, p.25.
10 Ibid.
ethanol plants operating in Minnesota with 2 more plants under construction. Many of these are, or started as, farmer-owned businesses.

Figure 3.1 shows Minnesota’s corn utilization for 2004 and projected for 2010. It clearly shows the increasing role that ethanol will play in the state as ethanol use increases from 16% of production in 2004 to an estimated 23% of production in 2010. The percentage of Minnesota’s corn for exports will decrease as a result.
Figure 3.1. Minnesota Corn Utilization

Figure 3.2 shows Ontario corn utilization for 1995 and 2004. Similar to Minnesota ethanol has been playing an increasing role in corn use at the expense of exports.

**Figure 3.2. Ontario Corn Utilization**

Unlike Minnesota however, where exports represented almost 50% of corn use in 2004, Ontario’s corn situation is much different. Table 3.2 shows Ontario corn supply and demand during the past ten years. Production has been unable to supply all of the corn necessary to meet the needs of the feed and industrial users. Production has stayed relatively consistent in the 200 million bushel range but production as a percentage of use has decreased from 92.5% in 1995/1996 to 77.8% in 2004/2005. This has been caused by an increase in industrial and feed use. Feed use has continually increased during this time period while industrial use increased in the late 1990’s when Commercial Alcohols began ethanol production at their Chatham plant and has since leveled off. The result has been the need to increase corn imports from the U.S.. The expected increase in future ethanol production will mean more corn will need to be imported or Ontario production will need to increase considerably. Increased Ontario production is not likely to occur under current market conditions.
Table 3.2. Ontario Corn Supply & Demand

<table>
<thead>
<tr>
<th>MILLIONS OF BUSHELS</th>
<th>(CROP YEAR Sept 1 - Aug 31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONTARIO</td>
<td>95/96</td>
</tr>
<tr>
<td>Carry-in stocks</td>
<td>16.54</td>
</tr>
<tr>
<td>Acreage (m ac) hrst'd</td>
<td>1.73</td>
</tr>
<tr>
<td>Average yield (bu/ac)</td>
<td>117.10</td>
</tr>
<tr>
<td>Production</td>
<td>202.00</td>
</tr>
<tr>
<td>Imports from U.S.</td>
<td>12.40</td>
</tr>
<tr>
<td>TOTAL SUPPLY</td>
<td>230.94</td>
</tr>
<tr>
<td>Industrial use</td>
<td>52.00</td>
</tr>
<tr>
<td>Feed use</td>
<td>133.90</td>
</tr>
<tr>
<td>Shipment to Quebec</td>
<td>8.50</td>
</tr>
<tr>
<td>Shipment to Atl.Cda.</td>
<td>5.00</td>
</tr>
<tr>
<td>Shipment to West</td>
<td>3.30</td>
</tr>
<tr>
<td>Exports to U.S.</td>
<td>11.50</td>
</tr>
<tr>
<td>Exports overseas</td>
<td>4.20</td>
</tr>
<tr>
<td>TOTAL USAGE</td>
<td>218.40</td>
</tr>
<tr>
<td>Net (Production - Usage)</td>
<td>-16.40</td>
</tr>
<tr>
<td>CARRYOUT</td>
<td>12.54</td>
</tr>
<tr>
<td>Production as % of Use</td>
<td>92.5%</td>
</tr>
<tr>
<td>Stocks as % of Use</td>
<td>5.7%</td>
</tr>
<tr>
<td>US Imports as % of Use</td>
<td>5.7%</td>
</tr>
<tr>
<td>Avg Weighted Price/bu</td>
<td>4.65</td>
</tr>
</tbody>
</table>

3.1 Summary of Key Points

The following are some key points learned in this section.

- Minnesota has been an area that experiences chronically low corn prices.

- Minnesota is the fourth largest producer of corn in the U.S. and exports nearly one-half of the corn produced in 2004.

- Ethanol production has been encouraged in Minnesota as a way to add value to corn and decrease exports.

- Ontario is a net importer of corn and Ontario production is currently not enough to meet the needs of feed and industrial users. For the 2004/05 production year, Ontario only produced 77.8% of the total volume of corn used.
4.0 The Ethanol Industry

This section provides a brief overview of the ethanol industry in terms of global production patterns, economics of production, and multiplier impacts.

Ethanol has been produced in North America for many decades. The Model T automobile was designed to run on ethanol, gasoline or a combination of both. Due to the abundance of inexpensive crude oil, however, gasoline became the fuel of choice. It wasn’t really until the 1970s oil crisis that countries such as Brazil and the United States realized how dependent they were on foreign oil and how vulnerable they were to fluctuating global oil markets. In order to decrease their dependence on foreign oil both countries began looking to renewable fuels such as ethanol as an alternative.

In recent years, interest in ethanol production has been increasing as many countries around the world look for ways to decrease their dependence on foreign oil, encourage economic development in rural areas, and use a renewable and more environmentally friendly fuel. Ethanol can be produced using different feed stocks but corn is the principal source in North America while sugarcane is used in Brazil.

As indicated above, Brazil was heavily reliant on imported oil until oil shortages occurred in the 1970s. These shortages prompted the Brazilian government to encourage the production of ethanol from readily available sugarcane. The government mandate currently in Brazil is to have all gasoline contain 25% ethanol. Car manufacturers in Brazil began offering flex-fuel vehicles in 2003 that can run on regular gasoline, 100% ethanol or any combination of the two.

Brazil is currently the world leader in ethanol production with about 15 billion litres produced in 2004. This is shown in Table 4.1. Some analysts predict global demand will reach 75 billion litres by 2015 and 20 to 25 billion litres in Brazil alone by 2010\textsuperscript{11}. Brazil exported approximately 2.5 billion litres of ethanol in 2004\textsuperscript{12}. Brazilian exports are expected to grow to between 6 and 10 billion litres per year by 2010\textsuperscript{13}.

\textsuperscript{12} Ibid., p. 484.
\textsuperscript{13} Ibid., p. 483.
### Table 4.1. Ethanol Production by Country (millions of litres)

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Country</th>
<th>2004</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brazil</td>
<td>15,338</td>
<td>14,428</td>
</tr>
<tr>
<td>2</td>
<td>US</td>
<td>13,950</td>
<td>10,900</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>3,650</td>
<td>3,400</td>
</tr>
<tr>
<td>4</td>
<td>India</td>
<td>2,000</td>
<td>190</td>
</tr>
<tr>
<td>5</td>
<td>France</td>
<td>830</td>
<td>817</td>
</tr>
<tr>
<td>6</td>
<td>Russia</td>
<td>460</td>
<td>745</td>
</tr>
<tr>
<td>14</td>
<td>Canada</td>
<td>245</td>
<td>204</td>
</tr>
</tbody>
</table>


The U.S. is quickly gaining ground on Brazil in terms of ethanol production. In 2004, the U.S. produced just less than 14 billion litres. There were about 90 ethanol plants in operation and several under construction. Many of these plants are in the 30 to 40 million gallon (113 to 150 million litres) range however there are some that are operating at 100 million gallons (378 million litres) per year or are planning to expand to that size. Most of the ethanol production is occurring in the major corn producing states such as Iowa, Minnesota, and Nebraska. A map of U.S. ethanol plants is shown in Figure 4.1. An interesting statistic is that one out of every 4 rows of corn in South Dakota is converted to ethanol.

**Figure 4.1. Location of U.S. Ethanol Plants**

![Map of U.S. Ethanol Plants](http://www.ethanolrfa.org/resource/facts/economy/)


Many of the ethanol plants in the U.S. started as farmer-owned plants and a large number still are. Farmers saw an opportunity to move into value-adding by turning their corn into ethanol. However, this does take a change in mind-set to move from production agriculture to upstream value-adding.
The U.S. recently signed a Renewable Fuels Standard that will result in ethanol production increasing to 7.5 billion gallons (28.4 billion litres) by 2012. This is double the 2004 production. It appears that the U.S. sees several advantages to adopting an aggressive ethanol policy. One of the main reasons is to decrease their reliance on foreign oil. The oil crisis of the seventies was the first example to highlight how dependent they had become on other countries for oil. After the terrorist attacks in September 2001 the U.S. really began to look for ways to decrease their dependence on Middle East countries. Ethanol production is touted as being environmentally friendly in that it is a renewable fuel and it provides a market for large amounts of inexpensive U.S. corn. These factors appeal to a wide audience. There are other variables such as increasing global demand for oil and the general instability of the oil market that will also influence the U.S. position on ethanol.

The numbers in Table 4.1 show that Canada is not a large ethanol producing country. Canada’s current fuel ethanol production is from 5 plants and the output from these plants represents less than 1% of the 40 billion litres of gasoline consumed in Canada in 2004. Two ethanol plants are located in Ontario and the other three can be found in the western provinces of Manitoba, Saskatchewan and Alberta. This is shown in Figure 4.2. Canada currently imports ethanol primarily from the U.S. and Brazil.

**Figure 4.2. Location of Canadian Ethanol Plants**

Canada’s Ethanol Expansion Plan (EEP) has an ethanol mandate that requires 3.5% of all gasoline-type fuel sold in Canada to be ethanol by 2010. A mandate such as this will require about 1.4 billion litres of ethanol. In order to reach this level of production the EEP allocated $118 million through two rounds of funding announcements to a total of 11 ethanol projects throughout Canada. These projects will result in approximately 1.2 billion litres of additional ethanol.

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production bringing total production to 1.4 billion litres including existing production capacity. Planned ethanol production, as announced through the EEP, is shown by province in Table 4.2.

Table 4.2. Canadian Planned Ethanol Production

<table>
<thead>
<tr>
<th>Province</th>
<th>Plant Name</th>
<th>Planned Expansion or New Production (mil litres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>Okanagan Biofuels Inc.</td>
<td>114</td>
</tr>
<tr>
<td>Alberta</td>
<td>Permolex Ltd</td>
<td>12</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>Pound Maker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Husky Oil Operations Ltd</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>NorAmera BioEnergy Corp.</td>
<td>25</td>
</tr>
<tr>
<td>Manitoba</td>
<td>Mohawk Canada Inc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Husky Oil Marketing Company</td>
<td>130</td>
</tr>
<tr>
<td>Ontario</td>
<td>Commercial Alcohols Inc</td>
<td>199</td>
</tr>
<tr>
<td></td>
<td>Seaway Grain Processors Inc</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Suncor Energy Products Inc</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Integrated Grain Processors Co-operative Inc</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>Power Stream Energy Services</td>
<td>52</td>
</tr>
<tr>
<td>Quebec</td>
<td>Commercial Alcohols Inc</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1,181</td>
</tr>
</tbody>
</table>


Ontario’s total gasoline sales in 2004 amounted to 15.7 billion litres\(^\text{15}\). This represents an increase of almost 23% over 1994 levels. Existing ethanol production in Ontario represents about 1.1% of total gasoline purchases. Ontario’s ethanol mandate is 5% by January 1, 2007. The recently announced federal funding for new ethanol production in Ontario should bring total production to about 800 million litres by 2007. This would allow Ontario to meet the 5% requirement and will represent more than half (about 57%) of total Canadian ethanol production.

4.1 Economics of an Ethanol Plant

There are many factors to consider when deciding where to build an ethanol plant. Some of these include the following: (i) where corn will be sourced from; (ii) are there other competitors for corn in the area; (iii) what kind of transportation system exists at or near the plant site to get corn to the plant and end products out; and (iv) where is the market for ethanol and other end products (e.g. DDGS and carbon dioxide).

University of Minnesota researchers believe there are five variables that are important to profitability regardless of where the plant is located. They are: price of corn, price of ethanol, price of natural gas, conversion factor and capacity factor.\textsuperscript{16} Depending on the price, corn can represent 50\% to 70\% of the cost of producing ethanol. Therefore, having access to a large supply of cheap corn is very important to profitability. The conversion factor relates to the amount of ethanol produced per bushel of corn and the capacity factor is the \% of nameplate capacity that the plant operates at. The economics of corn and ethanol transportation are as follows. A normal railroad car cost is $US1,500 for a 3,500 bu capacity car. Using a conversion rate of 2.8 gallons of ethanol per bushel of corn, means that a railroad car carries 9,800 gallons of ethanol and the transportation cost per gallon would be 15 cents (i.e. $US1,500 ÷ 9,800 gal). Normal ethanol transportation costs are 5 cents per gallon. Thus, there is significant savings from being located in a high corn production area.

Table 4.3 provides information on typical expenses and income for a 40 million gallon per year U.S. ethanol plant operating 20\% above nameplate capacity, therefore at 48 million gallons using 16,581,843 bushels of corn.\textsuperscript{17} This scenario assumes that a plant of this size would cost $60 million, there is 40\% equity and investors expect to receive a 12\% rate of return.

Table 4.3 shows income and expenses on a per bushel basis because farmer investors can relate easier to this. When farmers invest in a plant they invest a certain value per bushel of corn they plan to deliver. Plant managers and others involved in the ethanol industry usually refer to expenses and income on a per denatured gallon basis.


\textsuperscript{17} Ibid., p. 8.
Table 4.3. Income and Expenses for an Ethanol Plant ($US)

<table>
<thead>
<tr>
<th>Revenue Item</th>
<th>Rev/bu corn</th>
<th>Rev/denat gal ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>$3.3289</td>
<td>$1.1500</td>
</tr>
<tr>
<td>DDGS</td>
<td>0.7200</td>
<td>0.2487</td>
</tr>
<tr>
<td>CO2</td>
<td>0.0540</td>
<td>0.0187</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>$4.1029</strong></td>
<td><strong>$1.4174</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expense Items</th>
<th>Cost/bu corn</th>
<th>Cost/denat gal ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>$2.2000</td>
<td>$0.7600</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>1.9029</td>
<td>0.6574</td>
</tr>
<tr>
<td>Heat</td>
<td>0.4623</td>
<td>0.1597</td>
</tr>
<tr>
<td>Electricity</td>
<td>0.1578</td>
<td>0.0545</td>
</tr>
<tr>
<td><strong>Total Energy</strong></td>
<td><strong>0.6200</strong></td>
<td><strong>0.2142</strong></td>
</tr>
<tr>
<td>Chemicals</td>
<td>0.3937</td>
<td>0.1360</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.2412</td>
<td>0.0833</td>
</tr>
<tr>
<td>Maintenance/Repairs</td>
<td>0.0362</td>
<td>0.0125</td>
</tr>
<tr>
<td>Interest (at 7%)</td>
<td>0.1520</td>
<td>0.0525</td>
</tr>
<tr>
<td>Labour</td>
<td>0.1303</td>
<td>0.0450</td>
</tr>
<tr>
<td>Management/Quality Control</td>
<td>0.0394</td>
<td>0.0136</td>
</tr>
<tr>
<td>Taxes – property</td>
<td>0.0058</td>
<td>0.0020</td>
</tr>
<tr>
<td>Licenses/fees/insurance</td>
<td>0.0116</td>
<td>0.0040</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.0391</td>
<td>0.0135</td>
</tr>
<tr>
<td><strong>Other Processing Costs</strong></td>
<td><strong>0.6555</strong></td>
<td><strong>0.2264</strong></td>
</tr>
<tr>
<td><strong>Total Processing Costs</strong></td>
<td><strong>$1.6692</strong></td>
<td><strong>$0.5766</strong></td>
</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td><strong>$3.8692</strong></td>
<td><strong>$1.3366</strong></td>
</tr>
<tr>
<td><strong>Net Margin</strong></td>
<td><strong>$0.2337</strong></td>
<td><strong>$0.0807</strong></td>
</tr>
</tbody>
</table>


This spreadsheet shows that the price of ethanol and the price of corn play key roles in the overall profitability of an ethanol plant. If the price of ethanol decreases or the price of corn increases it can have a dramatic impact on the gross margin.

The information in Table 4.3 helps to focus attention on the gross margin, energy cost, chemical cost, processing cost and net margin. These are measures that are commonly used in the industry. Any method to decrease costs (i.e. hedging corn prices) or increase efficiencies can help make a plant more competitive. Energy costs are currently causing concern in the industry because of increasing natural gas prices. The net margin is the money available to make principal payments on debt and to provide a return to investors.

Most ethanol plants operating in the Midwest price their product as follows: 1/3 sold on a 6 month contract; 1/3 sold on the spot market; and another 1/3 sold on the gasoline price plus a factor.

18 Using an exchange rate of $C1.18 = $US1.00, total expenses converts to $C0.42/litre.
4.2 Economic Multiplier Effect of an Ethanol Plant

One of the main goals of most ethanol policies is to reduce the dependence on foreign oil. However, a second goal that receives much attention is the desire to improve economic development in rural areas. This is accomplished in several ways.

First, there is a large economic impact when the construction of the plant begins. The construction will result in the creation of many jobs during the roughly year-long process. Employees will use their earnings to purchase goods and services in the area. Once the plant is in operation there will be a number of full-time, year-round jobs and the plant will be required to pay taxes. The economic activity generated by the ethanol plant can be felt throughout the local economy in many industries (i.e. food, travel, manufacturing, services, and etc.), as the plant and employees purchase goods and services.

U.S. statistics show that a 40 million gallon/year plant provides many economic benefits to the community. For example, a plant of this size would19:

- result in 1,500 jobs and $150 million in economic impacts during the initial construction of the plant.
- employ 35 full-time employees on a payroll of $1.8 million once the plant is fully operational.
- pay taxes worth about $1.5 million per year.
- spend approximately 65% of the $60 million in gross revenues within a 75 mile radius.
- generate a total economic impact of more than $100 million with over 500 indirect and induced jobs.

In the state of Minnesota, the Department of Agriculture estimates the economic spin-off of the approximately 400 million gallons of ethanol production in 2004 to be $1.358 billion and 5,300 jobs. Minnesota plans to increase the ethanol mandate to 20% by 2012. When this occurs, it is anticipated that 574 million gallons of ethanol will be needed resulting in an economic impact of $1.578 billion and 6,157 jobs20.

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It is estimated that in Canada more than 70% of the revenue generated by an ethanol plant will be spent within 150 kilometers of the plant location\textsuperscript{21}.

5.0 Key Points From Study Trip to Minnesota

This section summarizes the main learning points from the study trip to Minnesota.

5.1 Michael Weaver, Partner, Agribusiness & Energy Group, Lindquist & Vennum PLLP

It was indicated that the co-operative structure operates as a pooling system by bringing together people and resources such as corn and money. A co-op has securities advantage in that less formal filings are required, it has a single level of taxation, and earnings are returned to patrons in proportion to patronage. A disadvantage is an 8% maximum return limit on benefits.

An LLC structure is treated as a partnership from a tax perspective and therefore has some tax benefits. The focus in this structure is on income going back to the owners, to minimize tax with more net money getting into the hands of the owners. There is no securities advantage and full filing with the Securities and Exchange Commission is required. In an LLC there is no limitation of benefits as there is in a co-op. Some LLCs have class A shares which may require delivery of corn and class B shares with no delivery requirement.

A unique business structure is called the 308B which is a hybrid between an LLC and a co-op. It is taxed like a partnership but has no securities advantages. The 308B allows non-patron capital to share in the benefits. It is very similar to an LLC but can be more complicated to set up. A corporation is a growth model where money is retained in order to grow the company. The shares are expected to increase in value and a corporation is subjected to double taxation.

5.2 Steve Domine, Senior Vice President, Stearns Bank

The first time Stearns Bank was approached about financing an ethanol plant was when a group of farmers brought a project forward for consideration. The farmers had raised $10 million and they needed $10 million from the bank. The USDA guaranteed the loan through the B&I program and this guarantee was critical from the bank’s perspective. It was reported that farmers do not benefit from ethanol plants “unless they own the place.” Just having a plant in the area doesn’t mean everyone benefits. Also, the bank stressed the importance of a sound management team for the project. Currently in the U.S., there are only a small group of people who seem to have the skills to make these farmer-owned plants work. It is critical to have experienced people to build the plants using proven technologies and then a qualified person to manage it once it is in operation. Stearns Bank has financed 12 different ethanol projects. Most banks still use the 3 C’s of lending, however, with an ethanol project client character and capacity to repay are more important
than collateral. The collateral in an ethanol plant is considered thin because of its poor marketability.

Currently demand is higher than the supply for ethanol and new plants can sign contracts and secure margins. There are some unknowns such as management, energy and shipping costs. Shipping costs can be the cost to bring corn in, usually by rail, or to ship ethanol out in tankers. Ethanol plants are expensive to build and the large multi-national firms (e.g. Cargill, ADM, and etc.) are gearing up to build their own plants now that they have seen other firms become successful. How long demand will keep up is another unknown.

A typical plant is 50 million gallons although some are 60, 80 or even 100 million gallons. There are some economies of scale to larger plants but the key is to have a plant that works efficiently regardless of size. With respect to project equity, having 50% was the industry norm when ethanol plants first got going although the requirements may be a bit more flexible today depending on the technology, who the sponsor/guarantor is, and the history of ethanol plants working in the area. The USDA B&I loan guarantee program has a fee of 2% to the bank which is then passed on to the client.

It was reported that the success of ethanol in Minnesota was due to the ethanol mandate, the US loan guarantee program (B&I), and the uncertainty over foreign oil supply. A marketing plan for an ethanol project is very important to the bank. A bank will want to know where the ethanol plant is getting the corn, if the plant is hedging, whether there are marketing agreements in place, contracts on corn, contracts on ethanol production, and most importantly where the ethanol will be going (i.e. which fuel blender).

Due to the member-owner structure of many of these value-added businesses some lenders include a “sweeps” clause in the loan provisions. The nature of the sweep is to pay down debt more quickly in the early years when the business may be very profitable rather than the business simply providing larger returns to the owners. This is sometimes done when the equity in the business is between 40% and 60%. Once a certain level of equity is reached, for example 60%, the sweeps provision does not apply. This requirement is sometimes included in ethanol projects but not always. It is realistic for a 40 to 50 million gallon plant to be paid off in 8 to 10 years.

It was reported that co-operatives sometimes have a challenge in getting a primary sponsor or guarantor – someone who is willing to sign for the co-op when financing is secured. The impression was given that the future will be good for ethanol. It is good to not rely so heavily on foreign oil, ethanol technology is sound and the industry will evolve to where the large multi-national firms will produce the bulk of production. Ethanol will then become more of a commodity and financing will be easier. Some uncertainties exist with respect to natural gas prices and what could happen if ethanol becomes regulated.
5.3 David Kolsrud, For Farmers, LLC., Farmer, Investor

It was reported that there are three critical requirements if farmer-owned ventures are to work. The first is to have people involved in the vision. This means that everyone has to understand the project, what is required, how it will get done and what the end result will be. If different people have different ideas of what the project is about then it will not work. The second critical success factor is to have co-operation. A project such as this will require a cohesive business structure with people working together. The third factor is commitment because of the huge capital investment required to build these plants.

It was indicated that the most important thing that happened in Minnesota was that the State gave them a market for their ethanol by mandating 10% ethanol. This was better than a government incentive because an incentive does little if there is no market for the product. It was stressed that success in Minnesota ethanol production has been due to having this market. This market will grow if Minnesota follows through with a 20% ethanol mandate by 2012. It was indicated that having sufficient USDA money available to help with the cost of feasibility studies has been crucial to getting started. It is important to get a good feasibility study done and it was recommended that it be done by a third party. In fact, this is a requirement for USDA funding under the value-added producer grant program. This is an important step because some projects are not feasible and should not be undertaken.

With respect to business structures it was reported that there are fewer farmer co-ops being established now. Part of this is because of the declining number of farmers. In a co-op structure it may not be possible to find enough farmers who can supply the amount of corn needed to run the ethanol plant and who are also prepared to commit sufficient financial resources. It was stated that older producers commit more readily to an ethanol project than younger ones because they have the financial resources. In some co-ops it has been difficult for members to exit the business when they are retiring because they can not find another farmer willing to buy their shares and commit corn. Co-ops also have the disadvantage of possibly becoming politically charged. In an LLC structure it is sometimes easier to secure enough equity through a combination of farmer-investors and outside investors. It is also easier to sell shares in an LLC when an investor wants to sell. LLCs are now the business structure of choice for most new ethanol projects. Set-up legal fees for a co-op are normally $US70,000 whereas a LLC costs $US120,000.

It was recommended that ethanol projects have 40% equity and this is a minimum level required by some USDA programs. It was reported that it takes a lot of work to get producers to invest in these types of projects and that about 20% of the people that attend the information meetings actually end up investing. This comes back to the critical factors indicated initially – vision, co-operation,
commitment. It was stated that ethanol plants often fail when they use unproven technologies.

It is believed that these projects (farmer-owned ethanol plants) have created jobs and rural economic development and they are rewarding in many ways. If the price of corn goes down there is still a market for corn and farmers can possibly benefit from their investment in ethanol. If fuel prices go down expenses on the farm are lower. If fuel prices increase farmers benefit from ownership in ethanol production.

5.4 David Gaffaney, Business & Co-operative Programs Director and Robyn Holdorf, Business & Co-operative Specialist, USDA Rural Development

With respect to the value-added producer grant program (VAPG) it was indicated that equity in value-added projects is very important and 40% equity is generally required for funding ethanol projects. USDA Rural Development programs do not provide funding to research and development, only commercial technology. It is necessary to have feasibility studies done by a third party in order to be eligible for funding. For the VAPG program extra points are awarded to projects that have a renewable fuels/energy component. Other examples of projects that have the potential to secure funding under this program are switching to organic or identity preserved. VAPG applications are assessed and funds are awarded nationally.

B&I (Business & Industry) loan guarantees have been viewed as very important when farmer groups approach banks for debt financing for their value-added projects. The B&I program provides a guarantee on up to 80% of the loan depending on the loan amount. This is like insurance for the bank.

The renewable energy/energy efficiency program is for businesses that are smaller in terms of sales. It is more suitable for projects such as bio-diesel plants or wind systems because the projects must have less than $20 million in sales.

More detailed information regarding these programs is provided in a later section of this report.

5.5 Ralph Groschen, Ag Marketing Specialist, Sr., Minnesota Department of Agriculture

It was reported that in 1980 Minnesota began offering a pump-tax credit to blenders willing to blend 10% ethanol with gas. The credit was $0.04/blended gallon or $0.40/gallon of ethanol. By 1986, 40% of the state’s gas was blended with ethanol but two-thirds of the corn was still exported. The state wanted to change that and began offering a production incentive of $0.20/gallon on up to 15
million gallons of ethanol produced per plant. Ethanol plants in the state have been doing well and many have expanded to three or four times their original size. Since 1997 all Minnesota gas has contained ethanol and it is now mandated at 10%. The pump tax was eliminated in 1997.

An Ethanol Program set aside $4 million to help these plants get established. Starting in 1993 qualifying plants could access $500,000 loans. These loans could be used to help, for example, build infrastructure because many of the plants are located in rural areas where there is little infrastructure (i.e. natural gas and water supply).

A general rule is it takes 32 to 35 people to run a 40 million gallon/year plant. It was stressed that it is crucial to find experienced production managers to operate the plant and staff with expertise at hedging. Lenders have 3 basic questions regarding a farmer owned ethanol plant and they are: Can farmers operate an ethanol plant?; How long will the government programs stay in place?; and Are the markets mature for ethanol production?

With respect to business structure arrangements it was stated that members of co-ops are having a hard time selling their shares when they want out and it is hard to find enough crop commitment for large projects. It is important to hire professional marketing/sales people when doing a membership drive. Potential investors need to see that the project is professionally done. It gives them more confidence in the project and they may be more willing to invest.

Bio-diesel production has started in Minnesota using soybeans, fats and canola. Minnesota just started having a 2% bio-diesel mandate which equates to 16 million gallons. There are currently three plants producing a total of 63 million gallons in Minnesota.

Minnesota has a Stock Loan Program to assist qualifying farmers who want to purchase stock in a value-added co-op or LLC.

5.6 Doug Tiffany, Research Fellow, Agricultural Energy Production and Use, and Vernon Eidman, Professor, Department of Applied Economics, University of Minnesota

It was indicated that the Renewable Fuels Strategy (RFS) requires 7.5 billion gallons of ethanol by 2012 and that amount should be easy to reach. By 2007 there should be 6.4 billion gallons produced annually. It was stated that the USDA believes that it is possible to have an 8 billion gallon per year mandate before there is an adverse effect on other corn users. It is believed that with production at the 8 billion level corn prices would increase by about $0.30/bushel. It was indicated that some of the large multi-national firms were starting to get into the ethanol business. For example, Cargill will have three 100 million gallon plants
operating in the next year. As expected, with new participants entering the industry, the level of competition amongst plants increases for things like corn, people and etc. In order for smaller plants to compete they may sell their ethanol to a marketing group (i.e. Renewable Products Marketing Group-RPMG) that then competes with the big companies like Cargill. These marketing groups get approximately 1-2% or the equivalent of 1 to 2 cents/gallon.

It was reported that there are three ways for government to play a role in agricultural value-adding. First, there is a need to have a formal group of experts who can help farmers get organized such as Co-operative Development Services. Second, the availability of grants to pay for feasibility studies and business plans is necessary to help groups figure out if the project has merit. Third is a price reporting requirement so that small plants would be able to determine if they are getting a fair price. This is not currently available in the U.S..

With respect to different business structures it was stated that it can be difficult to get out of a partnership or co-op especially when the company is worth a lot of money. Some co-ops have switched to an LLC structure because of this. It was reported that one business structure is not necessarily better or worse than another but rather the business leaders need to have a strong business plan and marketing plan. Marketing, financial accountability, meeting legal requirements, and strong equity positions are all very important to bankers because they are concerned about their level of risk. It was stated that the government loan guarantees and production incentives have been crucial in getting bank support in Minnesota.

Some advantages of ethanol plants were reported to be: the price of corn is higher in areas with ethanol production; ethanol production creates dependable jobs; it creates pride in the community; there is comfort in knowing that Minnesota is not so export dependent; and in the long-term, profits can return to the local community if local people own the plant. Rising energy costs are a big concern to ethanol plants right now.

5.7 Summary of Key Points

The following points summarize key things that were learned during the trip to Minnesota.

- Three ingredients for a successful producer-owned ethanol plant are co-operation, commitment, and common vision by stakeholders that are involved in the project.

- There is a need for government to create an ethanol mandate which then forms the market.
• Government support at the federal and state levels by providing funding for feasibility studies and business plans as well as production incentives and loan guarantees are critical to success.

• Ethanol plants need to use proven technologies and have experienced staff if they are to be successful in the long term.

• Farmers that have ownership in the value-adding business benefit the most.
6.0 U.S. Business Environment

This section provides information on government programs that are available to farmer-owned, value-added agricultural businesses at the federal level and at the state level, specifically for Minnesota. Some detail will be provided for renewable fuels programs as well. This information will not be an exhaustive listing because programs may be created, terminated or revised but it is intended to provide insight into the general types of programs offered.

6.1 U.S. Government Programs

The U.S. government has three rural development programs that are beneficial to agricultural value-adding projects. The USDA will provide assistance for commercial technologies but not for research and development initiatives. It is important to emphasize that the three programs discussed below are available only to businesses located in rural areas with less than 50,000 in population and in areas not immediately adjacent to an urbanized area (i.e. general rule of thumb is less than 100 people per square mile). A tabular summary of the three programs is provided in Table 6.1.

6.1.1 Value-Added Producer Grant (VAPG)

This program is designed specifically to provide support to projects that add value to agricultural products including such things as identity preserved, organic, ethanol, bio-diesel and etc. As the name implies, restrictions are placed on who can participate. Only farmers, groups of farmers, farmer co-operatives or majority-controlled farmer-based businesses can apply (i.e. multi-national firms would not likely be eligible unless producers own more than 50% of the project).

VAPGs are comprised of two separate grants. Planning grants are available to assist with the cost of feasibility studies, business plans, and marketing plans. Grants are available to a maximum of $100,000 per project in 2005 and the applicant must provide matching funds. This type of grant helps establish whether a project has the potential to succeed and what markets exist for the value-added product.

Working capital grants are the second type of grant available under the VAPG program. In 2005, these grants are available in amounts up to $150,000 to cover such things as salaries, office supplies, utilities, and etc. As with the planning grants the applicant must provide matching funds in order to receive a working capital grant. If the applicant received a VAPG planning grant there is a greater likelihood that they will be successful in being awarded a VAPG working capital grant.
Individual VAPG applications are submitted to the national USDA office where they are evaluated using a scoring system. Some criteria considered in the scoring process include commitment and support from the community and business owners, how well the project fits within the scope of Presidential initiatives, size of the business, project management, cost per farmer-owner, and etc.

For fiscal year 2005 there was $14.6 million made available to this program. The VAPG program will not provide financial assistance to cover the purchase of land or other real estate, equipment purchase, lease or installation or costs related to planning, repairing or constructing a building.

### 6.1.2 Business & Industry Guarantee Program (B&I)

The B&I program is available for most types of rural business enterprises from individuals to corporations. The U.S. government provides loan guarantees for businesses that are trying to get established, expand or even refinance. This type of program is often accessed by producer-owned value-adding businesses when they are trying to get financing. It acts as a type of default insurance on a portion of the loan.

It is possible for co-operatives to receive loan guarantees of up to $40 million while other business structures may receive a guarantee up to $25 million. For loans up to $5 million the maximum guarantee is 80%, for loans $5 to $10 million 70%, and for loans over $10 million the maximum loan guarantee is 60%. There is a guarantee fee of up to 2% that must be paid by the lender and this is usually passed on to the borrower. Interest rates are negotiated between the lender and the borrower. The maximum repayment terms are as follows: working capital 7 years; machinery/equipment 15 years or the useful life of the machine/equipment; and real estate 30 years. It is also possible for farmers to use this program to help them purchase stock in a co-operative. It is speculated that this program costs the USDA approximately $US20 to $US30 million annually to guarantee close to $US1 billion.

### 6.1.3 Renewable Energy/Energy Efficiency Program

The Renewable Energy program is designed for smaller rural businesses or even for individual farmers rather than large businesses such as ethanol plants. This is due to the requirement that the business must have less than $20 million in gross sales annually. Ethanol plants would generally exceed this level. Renewable energy and energy efficiency projects that would likely qualify are bio-diesel, geothermal, solar or wind energy projects. This program provides money for feasibility studies, business plans, the purchase of equipment and professional fees. Up to 25% of the cost is available through this grant with a minimum grant of $2,500 and a maximum of $500,000.
Table 6.1: Summary of USDA Rural Development Programs

<table>
<thead>
<tr>
<th></th>
<th>Value-added Producer Grant (VAPG)</th>
<th>Business &amp; Industry Guarantee (B&amp;I)</th>
<th>Renewable Energy/ Energy Efficiency Program (9006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>For value-added agricultural products i.e. renewable energy/fuel, identity preserved, organic</td>
<td>For business assistance</td>
<td>For renewable energy systems, improvements in energy efficiency</td>
</tr>
<tr>
<td><strong>Eligible Applicants</strong></td>
<td>Producers, producer groups, co-ops, producer controlled businesses</td>
<td>Individuals, partnerships, corporations, co-ops</td>
<td>Individual producers, small rural businesses with less than 500 employees and less than $20 million gross sales</td>
</tr>
<tr>
<td><strong>What is Eligible?</strong></td>
<td>Planning Grants - feasibility studies, business &amp; marketing plans</td>
<td>Term loans to help business get started, expand or refinance. Can be used for real estate, buildings, equipment and working capital.</td>
<td>Feasibility studies, business plans, construction, equipment, professional fees</td>
</tr>
<tr>
<td><strong>Potential Funds Available</strong></td>
<td>Planning Grants up to $100,000</td>
<td>Co-ops – up to $40 million</td>
<td>Renewable energy - $2,500 to $500,000</td>
</tr>
<tr>
<td></td>
<td>Working Capital Grants up to $150,000</td>
<td>Other businesses – up to $25 million</td>
<td>Efficiency projects - $2,500 to $250,000</td>
</tr>
<tr>
<td><strong>Other Provisions</strong></td>
<td>Grant covers up to 50% of eligible costs Project to be completed within 1 yr</td>
<td>Equity – new businesses 20% minimum and existing businesses 10% minimum</td>
<td>Grant covers up to 25% of eligible costs Project to be completed within 1 yr</td>
</tr>
</tbody>
</table>

Source: USDA

6.1.4 U.S. Renewable Fuels Production Incentives

The U.S. Commodity Credit Corporation Bioenergy Program has up to $150 million available annually to support the increased production of ethanol and biodiesel. Plants that commit to producing more fuel and are successful in producing more in a particular year compared to the year previous are eligible to receive a payment. The payment is based on the amount of additional feedstock required to produce the extra fuel and is dependent on the size of the plant. Ethanol plants producing up to 65 million gallons per year may be eligible to receive payment based on one feedstock unit for every 2.5 feedstock units used in the increased production. Plants larger than 65 million gallons receive reimbursement at a rate of 1 unit for every 3.5 feedstock units used to increase production22.

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22 Federal Register Vol. 67, No. 190/ Tuesday, October 1, 2002, p. 61566.
The Small Ethanol Producer Tax Credit is available to U.S. ethanol producers that produce up to 60 million gallons per year. The tax credit is $0.10/gallon for up to 15 million gallons. The definition of a small producer was changed from 30 million gallons to 60 million gallons in the recently passed Renewable Fuels Standard.

6.2 The Minnesota Ethanol Industry & Government Support

Minnesota has been a strong advocate for ethanol. Minnesota’s ethanol program began in 1980 when a pump tax credit was offered for 10% ethanol/gasoline blends however, the ethanol being used was not necessarily produced in Minnesota. In order to encourage economic development in rural areas and develop a market for some of the state’s corn Minnesota adopted a policy to replace 10% of the imported oil used for gasoline with ethanol. The ethanol mandate represents a market for ethanol and that is supportive to corn and ethanol prices.

Ethanol production in Minnesota expanded from 11 million gallons in 1990 to approximately 400 million gallons in 2004. Much of this is attributed to support from the Minnesota government. A significant incentive offered by the State was a $0.20/gallon production incentive on up to 15 million gallons per year per plant for ethanol plants that were in production by June 2000. This program actually began in 1986. The production incentive showed that the government was committed to, and supportive of, the ethanol industry. It also provided assurance to lenders that some income was guaranteed and in profitable years this additional money could be used to pay down debt quicker. This program is scheduled to end in 2010. The payment rate was reduced to $0.13/gal for fiscal years 2004 to 2007 due to budgetary constraints however the statute allows for the shortfall to be repaid after 2007.

Starting in 1993, $500,000 loans were offered by the state to help develop ethanol plants. These loans could be used to help with start-up costs such as helping to establish the necessary infrastructure in rural Minnesota where the ethanol plants are located. In 1994, a stock loan program became available to farmers who wanted to purchase stock in a value-added co-op. The stock loan program is available to producers that have a maximum net worth of $361,00023.

Most of the plants in Minnesota began with 15 million gallon capacity due to the production incentive but have since expanded with several of them operating in the 30 to 40 million gallon range due to profitability and to gain efficiencies. The state is in the process of moving to a 20% ethanol mandate by 2012 which will require about 574 million gallons of ethanol. This is currently one of the most aggressive ethanol policies in the United States.

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23 Minnesota Department of Agriculture, Stock Loan Program, Rural Finance Authority
6.3 Summary of U.S. Programs & Business Environment

It appears that the U.S. offers many benefits to farmers with respect to agricultural value-adding activities and ethanol production in particular. Some of the key points are listed below.

- The USDA offers some value-added programs that are available only to farmer or farmer-controlled projects.

- Several states and the U.S. government have enacted aggressive renewable fuels mandates that provide a market for ethanol production.

- The use of production incentives provides assurances to ethanol plants and their lenders that the government is committed to supporting the industry and the payment can help the plant manage fluctuating market conditions or pay down debt.

- Government loan guarantees reduce the risk to banks when financing ethanol plants.

- The U.S. Government is rewarding increased ethanol production through incentive payments and providing tax credits to small ethanol producers.
7.0 Canadian Government Programs and Business Structures

The following information discusses some Federal and Ontario government programs available for producer-owned value-adding projects.

7.1 Federal Programs

7.1.1 Ethanol Expansion Program (EEP) — The Government of Canada has provided a total of $118 million to help fund construction or expansion of eleven ethanol plants across Canada. This was discussed in Section 4.

7.1.2 National Biomass Ethanol Program (NBEP)\textsuperscript{24} — New or expanding ethanol plants can apply to this program for a contingent line of credit. They would be able to access the line of credit when the excise tax exemption is eliminated. The amount of the line of credit is calculated as the amount of new or expanded ethanol production multiplied by $0.208/litre. Plants would have to demonstrate that the removal of the tax exemption negatively affects their ability to make payments on debt before they can access the line of credit. This program may provide some security to lenders. The deadline to apply is March 31, 2006.

7.1.3 Planning and Assessment for Value-Added Enterprises (PAVE)\textsuperscript{25} — The PAVE program is available to Canadian farmer-producers who want to start or expand a value-added venture. Funds obtained through this program are to be used for feasibility studies or business plans for value-added processing. Up to 50\% of the cost or $10,000 per individual farmer is available. It is possible for groups of farmers to apply for funding for a project. If 3 or more producers are part of the application the limit is $25,000.

7.1.4 Farm Improvement and Marketing Co-operatives Loans Act (FIMCLA) — This is a loan guarantee program with funds of up to $3 million available for farmer-owned co-ops. The program guarantees loans for co-ops that are involved in the processing, marketing or distribution of value-added farm products and every member must be a farmer. FIMCLA is expected to end on March 31, 2006\textsuperscript{26}.

\textsuperscript{26} Agriculture & Agri-Food Canada, \textit{Extension of the FIMCLA}, March 17, 2005 \texttt{<http://www.agr.gc.ca/misb/nmp/fimcla/index.html>}, September 27, 2005

Ridgetown College, University of Guelph
7.1.5 **Western Canada – Agricultural Value-Added Loan Fund**\(^{27}\) — A program offered by Western Economic Diversification Canada in partnership with FCC called the Agricultural Value-Added Loan Fund, was available until September 22, 2005. The intent of the program was to provide financial assistance to small or medium-sized business. As the name implies the venture had to be involved in agricultural value-adding and be located in Western Canada. As well, applicant businesses had to have less than 250 employees and less than $20 million in sales. Funds from this program could be used for working capital, product development and upgrades or expansion. Loan amounts ranged from $50,000 to $1 million. The repayment terms were up to 10 years and postponing principal payments for up to two-thirds of the way through the length of the loan was possible.

7.1.6 **Ruminant Slaughter Facility Assessment Assistance** — This program provides financial assistance to farmers that want to start/expand a federally-inspected slaughter plant in Canada. It is not available for other types of agricultural value-adding. The money can be used to help fund feasibility studies, business plans or marketing plans. Funding of up to 50% of the costs or a maximum of $99,990 is possible although any money secured through the PAVE program counts toward this maximum\(^ {28}\).

7.1.7 **Ruminant Slaughter Equity Assistance (RSEA) Program**\(^ {29}\) — This recently announced program provides assistance to farmers who invest in an eligible slaughter facility. The producer must commit to supplying a certain number of animals to the facility for five years and must invest a minimum of $1,000. The government will provide funding up to 50% to a maximum of $20,000 per producer.

7.2 **Ontario Programs**

There are a small number of Ontario programs that are available for rural economic development but they generally require partnerships between businesses, organization, municipalities, and etc.. They are not designed for individual business situations. The Ontario programs that are more applicable to farmer-owned value-adding are now discussed.

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7.2.1 **Ontario Ethanol Growth Fund (OEGF)**\(^{30}\) - The Ontario government has established an Ontario Ethanol Growth Fund to help increase ethanol production and meet the 2007 deadline. The fund is expected to provide the following: 1) Agri-Business Capital Assistance to help with the cost of construction; 2) Agri-Business Operating Grants; 3) Regional Independents’ Fund to help distributors meet the 2007 blending deadline; and 4) Industry Development Fund to encourage research and investment\(^{31}\). Eligible applicants can be an individual, company, corporation or co-operative. Municipal governments can not have a controlling interest in projects that apply for funding. Details have been recently released for the Capital and Operating assistance only and are provided below.

i) **Agri-Business Capital Assistance**\(^{32}\) – Capital grants or loan guarantees will be made available to new or expanding ethanol plants in Ontario. The decision to award a grant or loan guarantee will be made using criteria such as financial need, business plan, economic impact to surrounding area and whether agreements or letters of intent are in place for purchasing the feedstock, selling ethanol and other co-products. Equity invested in the project must be 40% or more to qualify. The funding will not be more than $0.10/litre of plant capacity. Each applicant that receives a capital grant will be required to put 20% of the grant into a provincial Research & Development Fund.

ii) **Agri-Business Operating Grants**\(^{33}\) – To help ethanol plants cope with fluctuating corn and ethanol prices operating grants will be offered starting in 2007 for up to 10 years. These yearly payments will be based on a formula that takes into account prices of crude oil, corn, and ethanol. The maximum grant payment in any year will be $0.11/litre and it is possible that there may be years when no payment is made. Also, if a plant has an internal rate of return (IRR) equal to or greater than 17.5% any grant payment will be reduced to 60%. If the plant continues to be successful the grant will be further reduced. After three continuous years of achieving an IRR of 17.5% or greater the plant will not receive a grant unless the IRR falls below 17.5%. The province will provide funding for up to 750 million litres/year under this program.

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\(^{33}\) Ibid., pp. 2, 14.
7.3 **Business Organizational Structures**

It should be noted that this section was authored by Coralee Foster, Partner, BDO Dunwoody LLP, Mitchell, Ontario.

There are several business structures available in Ontario. However, the two that are most common and most practical for large producer value-added initiatives are co-operatives and corporations. This report will focus on co-operatives and private corporations, but will also provide an overview of other structures that are available.

In choosing which structure is appropriate, it is imperative that the incorporators obtain the appropriate professional advice. The purpose of this document is only to provide an overview of the options and issues to be considered.

**7.3.1 Establishment of Structure**

Certain procedures must be followed in order to establish either a corporation or a co-operative structure. Articles of incorporation must be applied for. This requires payment of a nominal fee, as well as proof of a recently completed name search. Directors and incorporators must be chosen at this time.

Both structures would be governed by a board of directors. Directors of a co-operative must be members. Depending upon the size of the entity, the board of directors may be involved in all decisions affecting the operation. However, as the entity grows, a management team would be hired to handle any daily operational issues and the role of the board of directors would be to provide strategic planning and to assess long term goals and requirements.

Both structures are separate legal entities with their own income tax reporting requirements.

*Co-operatives*

A co-operative must have a minimum of five members. There is no limit on the maximum number of members. After receiving a certificate of incorporation, the co-operative must be registered within 60 days with the Ministry of Consumer and Business Services.

A co-operative may be either a share capital co-operative or a member loan co-operative and this must be established at the outset. Currently, most co-operatives are share capital co-operatives.

In general, it is a more onerous task to set up a co-operative than it is to set up a corporation. In most cases, it is necessary to file an offering statement with the
Financial Services Commission of Ontario before any capital can be raised. Only after it has been approved can shares or loans be issued by the co-operative.

**Corporations**

A corporation must have a minimum of one shareholder. In order to remain as a private company, generally there must be fewer than 50 shareholders.

### 7.3.2 Membership and Ownership Requirements

In order to avoid potentially adverse tax consequences, members and owners of both structures would normally be Canadian residents.

**Co-operatives**

If a co-operative is established as a member loan co-operative, then participation is by the amount of funds advanced to the company. Under this structure, each member would receive one vote, regardless of the size of their member loan.

Presently, most co-operatives are set up as share capital co-operatives. There is at least one class of membership shares and may be several classes of preference shares. Voting rights are determined by the number of member shares owned by the member.

Members in a co-operative must be either a supplier or a user of the co-operative’s services or products. A member is an individual or corporation that holds membership shares or a membership loan.

Recently, there have been a number of “New Generation Co-operatives” established. These co-operatives focus on the processing and marketing of agricultural products, rather than marketing raw commodities or selling inputs. Members are required to provide commodities for processing. The amount each member is allowed to deliver is tied to the number of shares owned.

**Corporations**

All corporations have common shares. As well, preference shares may also be issued. Ownership of shares is not restricted to those who supply product or purchase goods or services from the company.

There may be several classes of shares issued and they have different attributes assigned to them upon incorporation. Both common and preference shares may have voting rights.
7.3.3 Transfer of Shares

**Co-operatives**

Membership shares are only transferable at the discretion of the board of directors and cannot be sold to other members. Share transfers must be approved by the board of directors, even for transfers between family members. The by-laws of the co-operative will dictate when shares can be redeemed by the co-operative.

Member shares will always be redeemed at their par value. If necessary for their financial viability, co-operatives may redeem shares at less than par value. However, they would never have a value higher than the original purchase price. Preference shares can be sold or transferred and may be redeemable or retractable depending on the by-laws established by the co-operative. Preference shares may be redeemed for a premium, subject to certain limits.

The by-laws of the co-operative will dictate when a member can no longer hold shares. There may be restrictions on share ownership for members over a certain age, those who have moved out of the area or those who are no longer farming. However, those who are no longer members will anticipate being repaid for their member shares; cash flow may sometimes make this difficult.

In order to hold member shares of a co-operative, the owner must be a potential user or supplier of the co-operatives services or products.

**Corporations**

Common shares will increase or decrease in value as the equity of the company fluctuates. The value that they are exchanged at will not be restricted. Preference shares generally have a fixed value.

All classes can be redeemable at the option of the holder and retractable at the option of the company, depending upon how they are set up at the time of incorporation. Additional shares can be issued as necessary.

7.3.4 Distribution of Profits

The Income Tax Act provides restrictions on the amount of profits that can be removed from either structure. Effectively, only tax paid profits can be paid out.

**Co-operatives**

Profits are paid from a co-operative as a patronage dividend. Patronage dividends are determined based upon the volume and type of business that the member has
conducted with the co-operative. The patronage will not be contingent upon the number of shares or member loans held.

Co-operatives with share capital may also pay regular dividends on both member and preference shares, although there is a cap on the amount paid on member shares. The maximum dividend that can be paid is capped at two percent above the prime rate of a financial institution named in the by-laws of the corporation. There is no cap on the dividends paid on preference shares. These would be determined based upon the number of shares held.

Member loan co-operatives may pay interest on borrowings from members, as determined by the board.

_Corporations_

Profits are paid by way of a regular dividend, as opposed to a patronage dividend. This is based upon the number of shares held. The attributes of the preference shares at incorporation will determine the ordering and amounts of dividends that may be paid on various classes of shares.

### 7.3.5 Taxation Policies

In general, co-operatives and corporations share most of the same rules regarding taxation of profits. Income tax legislation is structured to provide essentially the same tax treatment for co-operatives as for Canadian controlled private corporations. The same rules are in place for depreciation of capital assets in both and the same incremental tax rates apply. In 2005, the incremental combined federal and provincial tax rate in Ontario on the first $300,000 of taxable income is 18.6%. The only difference is how the distributed profits are taxed.

Capital cost allowance rates are the same for corporations and co-operatives. Presently, the more common rates are as follows:

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobiles</td>
<td>30%</td>
</tr>
<tr>
<td>Buildings</td>
<td>4% &amp; 10%</td>
</tr>
<tr>
<td>Computers</td>
<td>30% &amp; 45%</td>
</tr>
<tr>
<td>Equipment – self propelled</td>
<td>30%</td>
</tr>
<tr>
<td>Equipment – other</td>
<td>20%</td>
</tr>
<tr>
<td>Fences</td>
<td>10%</td>
</tr>
<tr>
<td>Office furniture</td>
<td>20%</td>
</tr>
</tbody>
</table>

A substantial producer value-added facility is likely to have several unprofitable years initially, due to high capital costs and a delay in generating significant revenue. Any losses incurred will carry forward for a period of up to seven years.
and can be used to offset future income. However, there is no provision for transferring those losses directly to the owners or members.

**Co-operatives**

Patronage dividends are deducted before determining taxable income and are included in the regular income of the recipient.

Example:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable income</td>
<td>$100,000</td>
</tr>
<tr>
<td>Patronage distribution</td>
<td>(40,000)</td>
</tr>
<tr>
<td>Income tax @20% (approx)</td>
<td>(12,000)</td>
</tr>
<tr>
<td>After tax funds retained</td>
<td>$48,000</td>
</tr>
</tbody>
</table>

In this example, the co-operative earns $100,000 of taxable income. $40,000 is distributed as a patronage payment to the members. The co-operative then pays tax of approximately $12,000 on $60,000 and retains $48,000.

The members would claim the $40,000 as regular income on their tax returns. The tax paid by the members would vary depending upon the form of ownership, other income and other deductions available in their own situation.

There is presently a proposal to permit members of eligible agricultural co-operatives to defer the inclusion in income of all or a portion of any patronage dividend received as an eligible share until the disposition of the share or until the share is pledged as collateral security.

In addition, co-operatives must do over 50% of their business with members over a three year period in order to maintain their status as a co-operative. As well, non-member business will limit the amount of funds that can be distributed as patronage payments. In the previous scenario, if 75% of business was with members, the co-operative would be allowed a deduction of no more than $75,000 in determining their deductible patronage payment.

**Corporations**

Dividends are not deducted in determining taxable income and are therefore paid from after tax dollars. The Income Tax Act provides a favourable tax treatment of dividends by the recipient.
Example:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable income</td>
<td>$100,000</td>
</tr>
<tr>
<td>Income tax @ 20% (approx)</td>
<td>(20,000)</td>
</tr>
<tr>
<td></td>
<td>80,000</td>
</tr>
<tr>
<td>Dividends</td>
<td>(40,000)</td>
</tr>
<tr>
<td>After tax funds retained</td>
<td>$40,000</td>
</tr>
</tbody>
</table>

In this example, the corporation earns taxable income of $100,000, pays tax of $20,000 and distributes $40,000 from after tax profits. This results in more tax paid in the corporation and less cash retained. However, in general, the recipients of the dividends receive more favourable tax treatment on the dividend income than they would have on the patronage distribution. Again, the amount of tax paid on the dividends will be dependent upon the personal situation of the recipient.

7.3.6 Other Reporting Policies and Issues

There are few differences in the reporting requirements for co-operatives and corporations. Both must prepare financial statements annually following the same principles. Except as noted above, tax is paid at the same rates under either structure.

Co-operatives must file with the provincial government, and have approved annually, an offering statement. This document outlines the capital to be raised from members and details the risks associated with those investments.

Members and owners of co-operatives and corporations are eligible to participate in the management of the company, as officers and directors of the company.

Liability is a concern to all parties involved in any business operation. In both corporations and co-operatives, the board of directors has the most exposure and can be found liable for mismanagement of the affairs of the organization or for any criminal action. In a co-operative, the members are liable only to the limits of the funds they have advanced to the co-operative. In a corporation, the liability for shareholders may be broader. In both cases, if members or shareholders have actively participated in the management of the organization, they increase their exposure.
7.3.7 Other Business Structures

There are other business structures available that could be considered. However, they are not as common or as practical for producer value-added ventures.

Limited Liability Partnerships

A limited liability partnership must have at least one general partner and an unlimited number of limited partners. Under a regular partnership, all partners are jointly liable for the debts and obligations incurred by the partnership, so that should the partnership fail, the assets of all partners could be at risk.

Under a limited liability partnership, the only risk exposure is on the initial investment itself. However, there must be a general partner, who is liable for all obligations. In practice, the general partner is normally a company with no assets. However, the director(s) of that company may ultimately bear some responsibility. Furthermore, limited partners are not able to participate in the management of the entity or they may forsake their creditor protection.

There are also significant income tax considerations when dealing with limited liability partnerships. All profits or losses flow through the partnership and are taxed in the hands of the partners. While this may be favourable in start up years when the entity may be generating losses, it is not ideal in years of significant profits.

There are various reporting requirements for limited liability partnerships. This coupled with the inability of the investors to be involved in the management of the operation, may preclude this from being a viable alternative.

Public Company

The previous discussions in this analysis assumed that the corporate structure was a private corporation. However, if a corporation has more than 50 shareholders or chooses to become eligible for trading on a public stock exchange, it then becomes a public company.

The reporting requirements for a public company are extremely onerous and therefore it is a costly structure to maintain. However, as a company grows and requires additional financing, becoming a public company may give access to many more investors and sources of capital. However, with that comes a loss of control.
**Joint Venture**

A joint venture is a single purpose joining of two or more entities for the purposes of undertaking a specific task. A joint venture is not a separate legal entity and does not have any reporting requirements.

Because a producer value-added facility would require co-operation of many parties in order to benefit the agricultural community, a joint venture would be a cumbersome, if not impossible, structure to maintain as there would be too many parties involved.

### 7.3.8 Conclusion

In general, a co-operative or private corporation appears to be the most feasible structures for operating a substantial value-added facility. They are both common in the agricultural community and therefore better understood by the potential investors. As well, they can result in preferential tax treatment of profits, maintenance of control by the agricultural community and the ability to access the equity of the interested parties.

The following chart, Figure 7.1, summarizes some of the differences discussed in this paper.

| **Figure 7.1. Differences Between the Co-operative and Private Corporation Business Structures** |
|---------------------------------|-----------------|-----------------|
| **Number of shareholders or members** | Co-operative: Minimum 5, no maximum | Private Corporation: Minimum 1, maximum 50 |
| Articles of incorporation | Yes | Yes |
| Offering statement | Yes | No |
| Membership requirements | Supplier or user of product or service | No restrictions on supply or use |
| Transfer of shares | At discretion of board | Normally not restricted, but may be established in agreement |
| Redemption value | Par value | Common shares will fluctuate with equity of company |
| Distribution of profits | Patronage | Dividends |
| Distribution of profits | Amount based on volume and type of business conducted with co-operative | Amount based on number of shares held |
| Tax treatment of distribution by payer | Patronage deducted in determining taxable income | Dividends paid from after tax profits |
| Tax treatment of distribution by recipient | Regular income | Dividend income |
| Liability | Limited to funds invested | May be broader limits |
7.4 Summary of Canada/Ontario Programs & Business Structures

The Canadian and Ontario governments provide some assistance to value-adding and ethanol projects. There is generally no support specifically for farmer-led projects with the exception of PAVE and the Ruminant Slaughter programs. The recent announcements at both the federal level and provincial level in Ontario for funding in the ethanol industry are somewhat encouraging for ethanol production however there is no funding targeted directly at farmer-owned plants. The level of funding generally offered for feasibility studies and business plans as well as loan guarantees is also not sufficient to provide much assistance to large projects such as ethanol plants. This may make it difficult for farmer-controlled businesses to secure financing and get the project going.

Producer-owned value-added businesses are limited in terms of business structures available to them. The co-operative structure works when smaller amounts of capital are needed but could be prohibitive to members when the project requires many millions of dollars be raised as in the case of an ethanol plant. The corporate structure provides an opportunity to raise more money from many investors but control of the project by local farmers may be lost. A limited liability partnership is not likely a viable option because of tax implications and also the inability of limited partners to participate in management unless they are prepared to give up some of their limited liability status.
8.0 Summary and Recommendations

The purpose of this section is to summarize key learning points from the study and provide some recommendations as to what Ontario might consider in terms of policy for ethanol production.

8.1 Summary Points/Key Findings

Briefly, the summary points from this study are as follows:

(i) With respect to adding value to corn, the production of ethanol appears to be a viable route that is being undertaken in many U.S. states. However, in order for producers to reap any significant benefit from this activity, they must be investors in the co-op or company that generates the ethanol or any other value-added activity. This was stated to the authors by all Minnesota industry stakeholders.

(ii) Ethanol plants do have a significant economic multiplier effect on local communities. U.S. statistics show that a 40 million gallon/year plant generates a total economic impact of more than $100 million with over 500 indirect and induced jobs created. Typically, a plant this size employs 35 full-time employees on a payroll of $1.8 million once the plant is fully operational.

(iii) Based on the Minnesota experience there are some important ingredients needed to create the business environment necessary for a successful ethanol industry and they are: the area must have surplus corn production relative to demand; the government needs to create policy that mandates ethanol use; the development of supportive government programs to assist producer value-added activities (i.e. grants for business plan development, loan guarantees, production incentives, and etc.); and savvy producer entrepreneurs willing to risk their capital.

(iv) There are several critical success factors in getting a producer owned ethanol plant operational and they include: vision, co-operation and commitment. Beyond this there is a need to hire outside professional help to generate the required business plan and operational strategy. Significant time must be invested in hiring experienced staff that are used to operating an ethanol plant. These criteria would carry over to any value-added activity.

(v) Unlike Minnesota, Ontario is not in a corn surplus position. Feed & industrial usage currently exceed corn production resulting in the need to import corn from the U.S. A plentiful supply of inexpensive corn is
critical for success in ethanol production. It is cheaper to transport ethanol than bulky corn.

(vi) With respect to ethanol production in Ontario, while the province has created a mandate for the product (i.e. 5% of all gasoline sales by 2007) the province has some of the other success factors missing. These factors would include not being corn surplus (i.e. Ontario only produces 78% of corn use) and the government programs are modest in comparison to those found in the state of Minnesota.

(vii) Other business environment factors (i.e. interest rates, labour rates, and government stability) are thought to be comparable between the two jurisdictions. While the common business structures used in Ontario are co-ops and corporations and in Minnesota they are co-ops and LLCs, it was found that there are advantages and disadvantages to each and there is not one clearly better suited than the next for producer value-added projects. The LLC structure, however, may be more flexible for large projects (i.e. ethanol plants where it is difficult to raise the necessary capital).

8.2 Conclusion

Benefits can accrue to agricultural producers that have ownership in value-adding activities if a supportive environment exists. Ontario needs to adopt a Minnesota-type model. This model incorporates a mandate or market for ethanol and encourages business structures that allow farmers and outside investors to invest together especially when the project requires a substantial amount of capital. Also, the Minnesota model provides consistent production incentives over the long term (i.e. $US 0.20/gallon of ethanol). Finally, through the USDA, funding is available specifically for farmer initiatives under the value-added producer grant program and substantial loan guarantees are also available. Together, these factors provide assurances to lenders of producer-owned value-adding businesses.

8.2.1 Recommendations

(i) Some value-added projects such as ethanol plants could potentially cost $60 to $100 million. A $25,000 grant to help with the cost of a feasibility study or business plan, while helpful, does not go far in providing support to a project of this magnitude. A more realistic amount would be $100,000 especially given the size of some value-added projects. The Ruminant Slaughter Facility Assessment Assistance program does provide this level of funding but it is not available for other agricultural value-adding projects. Also recall in the U.S., producers are eligible for up to $US 150,000 in startup operating funds.
(ii) Long-term Production Incentives – Consistent long-term levels of funding based on production are needed. A stable production incentive that does not fluctuate and is offered over the long term (i.e. 10 years) would show commitment to the industry. This type of funding would allow plants to be guaranteed a certain amount of income that could help guard against fluctuating prices or in profitable years it could be used to pay down debt quicker. This type of funding is also beneficial in securing financing.

(iii) Government Loan Guarantees – Loan guarantees provide a critical piece of the financial puzzle when producer-owned value-added businesses seek debt financing. Loan guarantees show that the government is committed to an industry or a project over the long term. If the lender sees that the farmer-owners are prepared to invest in the business and the government is prepared to guarantee a percentage of the loan amount then there is less risk for the lender. The risk for the lender and the government is also reduced if an unbiased reliable third party has conducted the business plan and the marketing plan is realistic.

Loan guarantees however, need to be in amounts that will be helpful to value-added projects. Value-adding projects can cost anywhere from a few thousand dollars to $100 million or more. A maximum loan guarantee of for example, $3 million will not be much help if the project requires $50 million in debt financing. If higher loan guarantees are available for farmer-owned projects this will encourage farmer-owned value-adding.

An application process could help the government identify projects that meet the criteria for key initiatives and determine the level of risk associated with each project. The actual cost to government for loan guarantees should be fairly small if applicants provide viable third-party prepared business and marketing plans as part of the application process. The possibility of default should be reduced.

(iv) Business Structure – The creation of a business structure such as the Limited Liability Company (LLC) in the U.S. should be considered in Canada. This structure has some characteristics of a co-op in that farmers can purchase membership shares which are tied to delivery rights and they can also purchase other types of shares that would provide them with an opportunity to earn a return on their investment. As well, the LLC structure is flexible enough to allow outside investors to invest money in a value-added project and earn a competitive return on their money. This can substantially increase the amount of equity raised for a project and will become increasingly important as the size of these value-added ventures grows.
Government has taken a good first step and deserves some acknowledgement for entering into and stimulating ethanol production, but for Ontario producers to benefit there needs to be further steps taken to increase rural jobs, and improve the rural economy. Ironically, in Ontario, big business has led the way and producers have been left behind whereas, in Minnesota, producers led the way.

In summary, the role of government is to provide a supportive environment for producer-owned value-adding. Specifically targeting funding assistance to producer-owned or controlled businesses will get more money into the hands of farmers and at the same time will improve the rural economy. Creation of a business structure that encourages farmer ownership and delivery and at the same time allows non-farmers to participate solely as investors will help these value-added businesses get the equity they need.
Appendix 1

Additional Information on U.S. Value-Added Projects
41A.09 Ethanol development.

Subdivision 1. Repealed, 2003 c 128 art 3 s 47

Subd. 1a. Ethanol production goal. It is a goal of the state that ethanol production plants in the state attain a total annual production level of:

1. 240,000,000 gallons in 2003;
2. 300,000,000 gallons in 2004;
3. 360,000,000 gallons in 2005 and 2006;
4. 420,000,000 gallons in 2007; and
5. 480,000,000 gallons in 2008 and subsequent years.

Subd. 2. Repealed, 1995 c 220 s 141

Subd. 2a. Definitions. For the purposes of this section, the terms defined in this subdivision have the meanings given them.

(a) "Ethanol" means fermentation ethyl alcohol derived from agricultural products, including potatoes, cereal grains, cheese whey, and sugar beets; forest products; or other renewable resources, including residue and waste generated from the production, processing, and marketing of agricultural products, forest products, and other renewable resources, that:

1. meets all of the specifications in ASTM specification D4806-01; and
2. is denatured as specified in Code of Federal Regulations, title 27, parts 20 and 21.

(b) "Ethanol plant" means a plant at which ethanol is produced.

(c) "Commissioner" means the commissioner of agriculture.

Subd. 3. Repealed, 1995 c 220 s 141

Subd. 3a. Ethanol producer payments. (a) The commissioner shall make cash payments to producers of ethanol located in the state that have begun production by June 30, 2000. For the purpose of this subdivision, an entity that holds a controlling interest in more than one ethanol plant is...
considered a single producer. The amount of the payment for each producer's annual production, except as provided in paragraph (c), is 20 cents per gallon for each gallon of ethanol produced on or before June 30, 2000, or ten years after the start of production, whichever is later. Annually, within 90 days of the end of its fiscal year, an ethanol producer receiving payments under this subdivision must file a disclosure statement on a form provided by the commissioner. The initial disclosure statement must include a summary description of the organization of the business structure of the claimant, a listing of the percentages of ownership by any person or other entity with an ownership interest of five percent or greater, and a copy of its annual audited financial statements, including the auditor's report and footnotes. The disclosure statement must include information demonstrating what percentage of the entity receiving payments under this section is owned by farmers or other entities eligible to farm or own agricultural land in Minnesota under the provisions of section 500.24. Subsequent annual reports must reflect noncumulative changes in ownership of ten percent or more of the entity. The report need not disclose the identity of the persons or entities eligible to farm or own agricultural land with ownership interests, individuals residing within 30 miles of the plant, or of any other entity with less than ten percent ownership interest, but the claimant must retain information within its files confirming the accuracy of the data provided. This data must be made available to the commissioner upon request. Not later than the 15th day of February in each year the commissioner shall deliver to the chairs of the standing committees of the senate and the house of representatives that deal with agricultural policy and agricultural finance issues an annual report summarizing aggregated data from plants receiving payments under this section during the preceding calendar year. Audited financial statements and notes and disclosure statements submitted to the commissioner are nonpublic data under section 13.02, subdivision 9. Notwithstanding the provisions of chapter 13 relating to nonpublic data, summaries of the submitted audited financial reports and notes and disclosure statements will be contained in the report to the committee chairs and will be public data.

(b) No payments shall be made for ethanol production that occurs after June 30, 2010.

(c) If the level of production at an ethanol plant increases due to an increase in the production capacity of the plant, the payment under paragraph (a) applies to the additional increment of production until ten years after the increased production began. Once a plant's production capacity reaches 15,000,000 gallons per year, no additional increment will qualify for the payment.

(d) Total payments under paragraphs (a) and (c) to a producer in a fiscal year may not exceed $3,000,000.

(e) By the last day of October, January, April, and July, each producer shall file a claim for payment for ethanol production during the preceding three calendar months. A producer that files a claim under this subdivision shall include a statement of the producer's total ethanol production in Minnesota during the quarter covered by the claim. For each claim and statement of total ethanol production filed under this subdivision, the volume of ethanol production must be examined by an independent certified public accountant in accordance with standards established by the American Institute of Certified Public Accountants.
Assessing and Comparing The Business Environment for Producer Value-Adding

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Public Accountants.

(f) Payments shall be made November 15, February 15, May 15, and August 15. A separate payment shall be made for each claim filed. Except as provided in paragraph (g), the total quarterly payment to a producer under this paragraph may not exceed $750,000.

(g) Notwithstanding the quarterly payment limits of paragraph (f), the commissioner shall make an additional payment in the fourth quarter of each fiscal year to ethanol producers for the lesser of: (1) 20 cents per gallon of production in the fourth quarter of the year that is greater than 3,750,000 gallons; or (2) the total amount of payments lost during the first three quarters of the fiscal year due to plant outages, repair, or major maintenance. Total payments to an ethanol producer in a fiscal year, including any payment under this paragraph, must not exceed the total amount the producer is eligible to receive based on the producer's approved production capacity. The provisions of this paragraph apply only to production losses that occur in quarters beginning after December 31, 1999.

(h) The commissioner shall reimburse ethanol producers for any deficiency in payments during earlier quarters if the deficiency occurred because appropriated money was insufficient to make timely payments in the full amount provided in paragraph (a). Notwithstanding the quarterly or annual payment limitations in this subdivision, the commissioner shall begin making payments for earlier deficiencies in each fiscal year that appropriations for ethanol payments exceed the amount required to make eligible scheduled payments. Payments for earlier deficiencies must continue until the deficiencies for each producer are paid in full.

Subd. 4. Rulemaking authority. The commissioner shall adopt rules to implement this section.

Subd. 5. Repealed, 1995 c 220 s 141.

Subd. 5a. Repealed, 2003 c 128 art 3 s 47.

Subd. 6. Repealed, 2003 c 128 art 3 s 47.

Subd. 7. Repealed, 2003 c 128 art 3 s 47.

Subd. 8. Repealed, 2003 c 128 art 3 s 47.

HIST: 1Sp1986 c 1 art 8 s 1; 1987 c 390 s 1,2; 1988 c 688 art 19 s 1; 1989 c 257 s 1,2; 1989 c 269 s 37; 1989 c 277 art 1 s 2; 1989 c 335 art 4 s 106; 1991 c 254 art 3 s 21; 1991 c 302 s 1; 1992 c 513 art 2 s 18; 1992 c 575 s 1,2; 1993 c 13 art 1 s 52; 1993 c 172 s 30,31; 1993 c 366 s 2; 1994 c 632 art 2 s 15-17; 1995 c 220 s 45-48; 1996 c 471 art 5 s 1; 1997 c 7 art 5 s 8; 1997 c 216 s 57; 1998 c 299 s 30; 1998 c 401 s 19,20; 2000 c 488 art 3 s 11; 1Sp2001 c 4 art 6 s 77; 2002 c 220 art 9 s 6; 2002 c 379 art 1 s 14; 2003 c 107 s 26; 2003 c 128 art 3 s 37,38; 1Sp2003 c 14 art 7 s 1; 2004 c 254 s 13

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239.791 Oxygenated gasoline.

Subdivision 1. **Minimum ethanol content required.** (a) Except as provided in subdivisions 10 to 14, a person responsible for the product shall ensure that all gasoline sold or offered for sale in Minnesota must contain at least 10.0 percent denatured ethanol by volume.

(b) For purposes of enforcing the minimum ethanol requirement of paragraph (a), a gasoline/ethanol blend will be construed to be in compliance if the ethanol content, exclusive of denaturants and permitted contaminants, comprises not less than 9.2 percent by volume and not more than 10.0 percent by volume of the blend as determined by an appropriate United States Environmental Protection Agency or American Society of Testing Materials standard method of analysis of alcohol/ether content in motor fuels.

Subd. 2. Repealed, 1993 c 250 s 3

Subd. 3. **Blending restriction.** When gasoline contains an oxygenate, a person responsible for the product shall not blend the product with ethanol or with any other oxygenate after it is transferred or otherwise removed from a refinery or terminal.

Subd. 4. Repealed, 1995 c 220 s 141

Subd. 5. Repealed, 1995 c 220 s 141

Subd. 6. Repealed, 1995 c 220 s 141

Subd. 7. **Oxygenate records; state audit.** The director shall audit the records of registered oxygenate blenders to ensure that each blender has met all requirements in this chapter. Specific information or data relating to sales figures or to processes or methods of production unique to the blender or that would tend to adversely affect the competitive position of the blender must be only for the confidential use of the director, unless otherwise specifically authorized by the registered blender.

Subd. 8. **Disclosure.** A refinery or terminal, shall provide, at the time gasoline is sold or transferred from the refinery or terminal, a bill of lading or shipping manifest to the person who receives the gasoline. For oxygenated gasoline, the bill of lading or shipping manifest must include the identity and the volume percentage or gallons of oxygenate included in the gasoline, and it must state: "This fuel

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contains an oxygenate. Do not blend this fuel with ethanol or with any other oxygenate." For nonoxygenated gasoline sold or transferred before October 1, 1997, the bill or manifest must state: "This fuel must not be sold at retail in a carbon monoxide control area." For nonoxygenated gasoline sold or transferred after September 30, 1997, the bill or manifest must state: "This fuel is not oxygenated. It must not be sold at retail in Minnesota." This subdivision does not apply to sales or transfers of gasoline between refineries, between terminals, or between a refinery and a terminal.

Subd. 9. Repealed, 1995 c 220 s 141

Subd. 10. Exemption for airport, marina, mooring facility, and resort. A person responsible for the product may offer for sale, sell, or dispense at an airport, marina, mooring facility, or resort, for use in airplanes or for purposes listed under subdivision 12, paragraph (a), gasoline that is not oxygenated in accordance with subdivision 4 if the gasoline is unleaded premium grade as defined in section 239.751, subdivision 4.

Subd. 11. Exemption for motor sports racing. A person responsible for the product may offer for sale, sell, or dispense at a public or private racecourse, gasoline that is not oxygenated in accordance with subdivision 1 if the gasoline is intended to be used exclusively as a fuel for off-highway motor sports racing events.

Subd. 12. Exemption for collector vehicle and off-road use. (a) A person responsible for the product may offer for sale, sell, or dispense at a retail gasoline station for use in collector vehicles or vehicles eligible to be licensed as collector vehicles, off-road vehicles, motorcycles, boats, snowmobiles, or small engines, gasoline that is not oxygenated in accordance with subdivision 4 if the person meets the conditions in paragraphs (b) to (e). If the nonoxygenated gasoline is for use in a small engine, it must be dispensed into a can with a capacity of six or fewer gallons.

(b) The nonoxygenated gasoline must be unleaded premium grade as defined in section 239.751, subdivision 4.

(c) No more than one storage tank on the premises of the retail gasoline station may be used for storage of the nonoxygenated gasoline offered for sale, sold, or dispensed by the station.

(d) The pump stands must be posted with a permanent notice stating: "NONOXYGENATED GASOLINE. FOR USE IN COLLECTOR VEHICLES OR VEHICLES ELIGIBLE TO BE LICENSED AS COLLECTOR VEHICLES, OFF-ROAD VEHICLES, MOTORCYCLES, BOATS, SNOWMOBILES, OR SMALL ENGINES ONLY."

This notice must be posted at least two feet above the ground. A retail gasoline station that sells nonoxygenated premium gasoline as defined in section 239.791, subdivision 15, must register every two years with the director, or an entity appointed by the director, on forms approved by the director, the total amount of nonoxygenated premium gasoline sold annually.

Subd. 13. Exemption for certain riparian landowners. (a) A person responsible for the product may offer for sale, sell, and deliver directly to a bulk fuel storage tank gasoline

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that is not oxygenated in accordance with subdivision 1 if the conditions in paragraphs (b) to (e) are met.

(b) The nonoxygenated gasoline must be unleaded premium grade as defined in section 239.751, subdivision 4.

(c) The bulk fuel storage tank must be stationary or permanent.

(d) The bulk fuel storage tank must be under the control of an owner of littoral or riparian property and located on that littoral or riparian property.

(e) The nonoxygenated gasoline must be purchased for use in vehicles that would qualify for an exemption under subdivision 12, paragraph (a).

Subd. 14. Exemption for aircraft operator. A person responsible for the product may offer for sale, sell, and deliver directly to a bulk fuel storage tank gasoline that is not oxygenated in accordance with subdivision 1 for use in aircraft if the nonoxygenated gasoline is unleaded premium grade as defined in section 239.751, subdivision 4.

Subd. 15. Exemption for certain blend pumps. A person responsible for the product, who offers for sale, sells, or dispenses nonoxygenated premium gasoline under one or more of the exemptions in subdivisions 10 to 14, may sell, offer for sale, or dispense oxygenated gasoline that contains less than the minimum amount of ethanol required under subdivision 1 if all of the following conditions are met:

(1) the blended gasoline has an octane rating of 88 or greater;

(2) the gasoline is a blend of oxygenated gasoline meeting the requirements of subdivision 1 with nonoxygenated premium gasoline;

(3) the blended gasoline contains not more than ten percent nonoxygenated premium gasoline;

(4) the blending of oxygenated gasoline with nonoxygenated gasoline occurs within the gasoline dispenser; and

(5) the gasoline station at which the gasoline is sold, offered for sale, or delivered is equipped to store gasoline in not more than two storage tanks.

This subdivision applies only to those persons who meet the conditions in clauses (1) through (5) on the effective date of this act and have registered with the director within three months of the effective date of this act.

HIST: 1992 c 575 s 29; 1993 c 250 s 1; 1993 c 369 s 73, 74; 1995 c 220 s 116; 1996 c 354 s 8-11; 1999 c 231 s 174-177; 2000 c 434 s 2; 2003 c 107 s 30; 2004 c 189 s 3, 4

Please direct all comments concerning issues or legislation

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Locally owned renewable energy projects

David Kolsrud

**STEPS INVOLVED FROM CONCEPTION TO COMPLETION**

Kolfarm Document 360©

There is no crystal clear path that works for all projects, but most follow a general outline.

**Step**

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Different Projects will demand change in order of these steps. These steps are only to serve as a guide. Some projects are much more involved and will have several additional steps.

Kolfarm Document 36
APPLICATION CHECKLIST FOR ETHANOL FINANCIAL ASSISTANCE

_____ Company federal and state tax I.D. numbers
_____ Application agreement and application fee
_____ Request indicating the desired financial assistance
_____ Statement of the sources and uses of funds
_____ Future financing needs
_____ Collateral offered for the financial assistance requested
_____ Project cost summary
_____ Complete business plan for the applicant
_____ Management information and resumes
_____ Last three year-end balance sheets and P/L’s
_____ Latest interim balance sheet and P/L (Current within 90 days)
_____ Pro-Forma balance sheet
_____ 60 month profit and loss projection
_____ 60 month projected cash flow (First year by month)
_____ Certification the applicant will not discriminate in employment
_____ Statement of all permits and licenses needed
_____ Authorization to disseminate application contents, as necessary
_____ Personal financial statement on principals (Current within 90 days)
_____ Resolution of support or other comparable preliminary approval
APPLICANT AGREEMENT FORM FOR ETHANOL FINANCIAL ASSISTANCE

The applicant submits a non-refundable application fee of two thousand dollars ($2,000) for a financial assistance application to build or expand ethanol production facilities within the State of Minnesota.

The applicant agrees to pay all out-of-pocket costs, including but not limited to legal expenses and expenses of a financial consultant, which are required to process, review and analyze the application.

The undersigned hereby certifies that all information provided by applicant in the application is true and accurate.

The application checklist must accompany this Applicant Agreement Form.

_______________________________
(Full Name of Borrower)

By: ___________________________
Title: _________________________
Date: _________________________
Phone: _________________________
PROGRAM DESCRIPTION: VADG was authorized by the Agriculture Risk Protection Act of 2000 and was amended by the Farm Security and Rural Investment Act of 2002, better known as the Farm Bill. The Farm Bill establishes four related, but different programs from the $40 million of funds per year. The programs are:
(1) Value-Added Producer Grants (VAPG) - described in detail below
(2) Agricultural Marketing Resource Center - establish value-added information resource centers
(3) Agricultural Innovation Centers (AIC) - provide marketing, planning, & technical assistance to value-added businesses
(4) Agricultural Innovation Research Grant - university research on the impact of value-added activities

VALUE-ADDED PRODUCER GRANTS (VAPG): Help producers expand their customer base by entering into emerging markets for their products or commodities and ensure that a greater portion of the revenues derived from the value-added activity is available to the producer.

ELIGIBLE APPLICANTS: Independent producers, cooperatives, agricultural producer groups (such as commodity groups) and majority-controlled producer-based groups are eligible to apply.

ELIGIBLE PRODUCTS: Four categories are considered “value-added” under this program.
- Ventures in which agricultural producers add value to their products through a change in the physical state or form of the product. (Processing wheat into flour, corn into ethanol, slaughtering livestock)
- Producing products in a manner that enhances its value. (organic)
- Physical segregation of an agricultural commodity or product in a manner that results in the enhancement of the value of that product. (IP)
- Any agricultural commodity or product that is used to produce renewable energy on a farm or ranch. (methylene digesters, wind turbines)

Priority will be given to proposals that emphasize the development of renewable energy from agricultural production.

ELIGIBLE PURPOSES: Planning Grants can be awarded for such activities as conducting feasibility analyses, developing business and marketing plans. Working Capital grants may be used for expenses associated with operations while the venture develops cash flow. Some things that grant funds cannot be used for:
- the development or acquisition of buildings or other facilities,
- to purchase, rent, or install fixed equipment,
- pay costs incurred prior to receiving the grant,
- pay expenses associated to agricultural production

TERMS: The maximum allowable planning grant amount is $100,000 and working capital is $150,000. Grant recipients must provide 1-to-1 matching funds. Projects must be completed within 1 year.

FUNDING CYCLE: Selections will be made annually in the National Office for fiscal years 2002-2007.

CONTACT: Applications are made at the Rural Development State Office in St. Paul following the announcement in the Federal Register inviting applications. Additional information about this program can be found at: http://www.rurdev.usda.gov/rbs/coops/vadg.htm or you may contact Robyn Holdorf at 651-602-7812.
Appendix 2

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