NET INCOME, RISK AND BUSINESS PLAN FOR HAUGER FARM

by

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ABSTRACT

The purpose of this thesis is to compare the net income and risk associated with custom farming, cash rent, and crop-share. This analysis will help provide insight on the best option for my 40 acres of farm land, which I recently was given from my mother. The 40 acres is located in Codington County, SD and has been previously in a corn, soybean, and wheat rotation. Another goal of the thesis is to create a business plan for Hauger Farm, which will lay out the activities involved for custom farming.

The 40 acres will continue to be in a corn, soybean, and wheat rotation. A 12-year analysis was developed to determine the net income and risk associated with custom farming, cash rent, and crop-share. The analysis consisted of historical data from the past nine years while predicting the next three years. After creating the net income statement, the option providing the most income over the long-run was to have the land custom farmed. Custom farming also brought the most income variability or risk; while cash rent showed to have the lowest risk with the least variable income.

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The author also wishes to thank my mother, Dianne Hauger, who has been very generous to give her 40 acres to me. This has given me the opportunity to pursue farming the 40 acres. I would also like to thank my brother Rob Hauger who has helped me tremendously with the agronomics for the 40 acres. Rob has been essential in recommending the correct amount of inputs to apply from the fertilizer to the corn hybrid to plant. Rob will continue to look after the 40 acres during the growing season which will be a huge benefit while I am in Kansas. A big thank you goes out to my uncle Kenneth Raml who will be the custom operator for the 40 acres. Without Kenny's help this opportunity would have been much harder.

I would also like to thank my wife Jarah Hauger who has been beside me the whole MAB program. I can't wait till we graduate together and look back upon this great learning experience!

CHAPTER I: INTRODUCTION

1.1 Background

I have always been heavily involved in the agricultural industry. I grew up on a small 80 acre hobby farm in southwestern Minnesota. We grew corn, soybeans, and raised a few head of cattle for 4-H. Through high school, I worked at a local John Deere dealership and had a desire to farm someday. After graduating college, I was able to obtain a job with John Deere Company and now work out of the North American Agricultural Marketing Center in Olathe, KS. Because of economies of scale, I knew coming back to our 80 acre farm was not an option, so finding a job in agribusiness was my best alternative.

I recently was given 40 acres of cropland by Kranzburg, SD from my mother Dianne Hauger who had inherited the land from her parents. Figure 1.1 shows an aerial view of the 40 acres, which is in Codington County, South Dakota. The land has been in the family for over a century and was first homesteaded by my great grandpa Michael Raml. The 40 acres has been cash rented for the past four years to my Uncle Tom who had a small grain, soybean and corn rotation on the acreage.

Figure 1.1: Satellite Map of 40 Acres

Many young adults go through the same situation after inheriting farm land, which can be both exciting, but very frustrating. Some land owners know exactly what to do with the farm land while many do not. Over the next several years the question of what to do with inherited farm land will become increasingly important. The average age of farmers owning farm land continues to increase. According to the farm census taken in 2007 about 60 percent of the farmers in the United States are over the age of 55. In 2007, non-operators owned 29 percent of all the land in farms in the United States and also owned 77 percent of farmland that is rented. Since 1969, the percentage of farm operators 65 years or older has increase nearly 10 percent. (Enviromental Protection Agency 2013).

Non-operators also tend to be older and less likely to live on the farm. Land owners often: (Dhuyvetter 2014)

- Are geographically and generations removed
- Are unaware of current agriculture technology and farming practices
- Are old and easily taken advantage of
- View the agreement with a tenant is a long-term relationship handed down from their parents
- Believe farming is a low-income business and want to “do their part” in aiding it
- Believe there are limited amount of tenants; and so are obligated to the existing tenant

As the farmers and non-operators grow older in the coming years a younger population will start to inherit farm land. Young adults will need to be educated on the revenue potential from the different options available with their farm land.

1.2 Ownership Options

Non-operator land owners have many choices and opportunities with their land; but the three main choices, if they want to keep ownership include: cash rent, crop-share, or having it custom farmed. Cash rent or lease is a fixed payment given to the land owner from the tenant to farm the land. Cash rent is usually figured on a per acre basis and can range in value depending on productivity of the land. Cash rent will provide the land owner a fixed income and is very low risk. Crop-share is another alternative for a land owner. Usually crop-share is based on a percentage basis like 50/50, 25/75 or 33/66. In a 50/50 arrangement the land owner pays for half the variable inputs, provides the land and gets 50 percent of the crop. The tenant will provide all the labor and machinery, pays half of the variable inputs and receives 50 percent of the crop. Crop-share is riskier for the land owner because the income is highly variable; but usually provides a higher income than cash rent. The final option would be for the land owner to have the land custom farmed. The land owner would buy all the variable inputs like fertilizer, seed and chemical; plus pay a custom operator to till, plant, spray and harvest the crop. However, the land owner receives the entire crop after harvest, to market and sell. This allows the land owner to control what fertilizer to apply and which crop rotation to plant. Custom farming would carry the most risk or income variability to a land owner but might provide the highest income. To make custom farming successful, close communication between the operator and land owner is crucial. A long-term crop rotation should be developed along with a detailed 12-month crop production plan. Contracts and payments are other key factors that need to be considered to make custom farming successful.

1.3 Objectives

To help understand and compare the different risks, net returns, and planning associated with cash rent, crop-share, and custom farming, this thesis will address the objectives below:

- Measure the net income between the three options and compare
- Measure the risk associated with the three options using income variability
- Create a business plan for Hauger Farm, which may be utilized by other small farms in a custom farming agreement

CHAPTER II: THEORY

2.1 Net Income

Maximizing profit is the primary objective for all business ventures including large and small farms. Profit is the net income earned by an entrepreneur for running a business (Bade and Parkin 2004). Whether measuring profit for the past or projecting profit for the future, maximizing profit is the most important measure of success for a business. A business that is not profitable in the long run cannot survive (Hofstrand 2009).

Profit is a measure of net income which is the difference between gross income and expenses. Typical gross income on farms includes cash from selling crops and livestock and payments from the government. Expenses are the cost of resources used on the farm such as seed, chemicals and fertilizer. To measure the profit of a farm or business an income statement is typically used.

The income statement shows the income earned during the accounting year and the expenses that are properly assignable to that year. The difference between the two is net income or loss. The items typically included in a farm income statement include: (Langemeier 2011)

- Farm Receipts
- Inventory of Crops, Livestock, and Accrued Income
- Farm Operating Expenses
- Inventory Value of Accrued Expense
- Depreciation Expenses
- Sale of Capital Assets

Typically, farmers have used the cash method of accounting where income and expenses are reported on the income statement when products are sold and inputs are paid for. The cash method counts an item as an expense when it is purchased, not when it is used on the farm. This has been helpful when managing annual tax liability. However, net income can be distorted by selling more than two years of crops in one year, purchasing production inputs in the year before they are needed, or selling livestock purchased in the prior year (Hofstrand 2009). Figure 2.1 shows the cash method of accounting.

Figure 2.1: Cash Accounting Formula

Cash Accounting Formula

+ Income (farm products are sold)

– Expenses (production inputs are purchased)

= Net Income (difference between income and expenses)

(Hofstrand 2009)

Another option to accurately show net income is the accrual method of accounting. With this method, income is reported when products are produced and expenses are reported when inputs are used. The accrual method uses the same principle as the cash method, but will also add or subtract farm product inventories and production inputs on hand at the beginning and ending of the year (Hofstrand 2009). Figure 2.2 shows the accrual method.

Figure 2.2: Accrual Accounting Formula

Accrual Accounting Formula

+ Accrual Income (when farm products are produced)

– Accrual Expenses (when production inputs are used)

= Net Income (difference between accrual income and accrual expenses)

(Hofstrand 2009)

2.2 Business Plans

Business plans are critical for any business, organization or association that wants to be successful. A business plan is a roadmap for the organization or business which shows the destination it wants to take, the path it will follow, the supplies it will need, and resources required to complete the journey (Jones 2000). Business plans are also very important in agriculture, especially farms, no matter how large or small your inventory, payroll, and bank account are. To be successful a farm operation must know its current status and future plans. A good business plan will be realistic, simple, specific, and complete. In the long-run your business plan will serve many purposes such as: (Beale, Dill and Johnson 2012)

- Supporting a loan application
- Defining a new business, goals and steps to achieve these goals
- Evaluating the success of business and marketing strategies
- Setting a path for the business in the next 3-5 years
- Growth and development for an establish business

CHAPTER III: METHODS AND DATA

In this chapter, I will present the data collected to compare the net returns of custom farming, cash rent and crop-share, and I also will show an outline of a typical farm business plan.

3.1 Data for 12-Year Analysis

To determine the net returns and income variability of cash rent, crop-share and custom farming I will use a 12-year analysis. The analysis will consist of the past nine years and predict the next three years. I will have a corn, soybean and wheat rotation, so the analysis will show net returns for four years on each of those crops. The analysis is based on averages taken from statistical surveys from various sources including the United States Department of Agriculture (USDA) and Agricultural State Universities.

The National Agricultural Statistical Service (NASS) data were used to find the average yield, cash rent, and commodity prices for Codington County. To project the average yield for 2013-2016 the average was taken from the past eight years. USDA data were used to project the average commodity prices from 2014-2016. I estimated that cash rent would not change over the next three years.

Table 3.1 shows the average corn, soybean and wheat yield for Codington County from 2005-2016 taken from NASS. The NASS database had the average yield for years 2005-2012. Years 2013-2016 were projected by taking the average of years 2005-2012.

Table 3.1: Average Crop Yield – Codington County, SD 2005-2016

			Bushels/Acre		
Year	State	County	Corn	Soybeans	Spring Wheat
2016	SD	Codington	136	35	52
2015	SD	Codington	136	35	52
2014	SD	Codington	136	35	52
2013	SD	Codington	136	35	52
2012	SD	Codington	133	33	51
2011	SD	Codington	143	35	36
2010	SD	Codington	145	36	53
2009	SD	Codington	139	34	56
2008	SD	Codington	135	35	59
2007	SD	Codington	140	39	52
2006	SD	Codington	99	32	50
2005	SD	Codington	155	36	56

(National Agriculture Statistics Service 2014)

Table 3.2 shows the average price received for corn, soybeans and wheat for South Dakota from 2005-2016. The projected prices for corn, soybeans and wheat from 2014-2016 were taken from the USDA (Clark 2014). Keep in mind that these commodity prices are averages for South Dakota and could change depending on the basis level around Codington County, SD.

Table 3.2: Average Commodity Prices – Codington County, SD 2005-2016

		Price/Bushel		
Year	State	Corn	Soybeans	Spring Wheat
2016	USDA	$3.30	$8.90	$4.35
2015	USDA	$3.65	$8.85	$4.90
2014	USDA	$3.90	$9.75	$5.30
2013	SD	$4.50	$12.15	$7.00
2012	SD	$6.72	$14.20	$8.33
2011	SD	$6.03	$12.20	$8.42
2010	SD	$5.09	$10.90	$7.40
2009	SD	$3.23	$9.18	$5.42
2008	SD	$3.78	$9.65	$7.46
2007	SD	$4.17	$9.60	$6.77
2006	SD	$2.88	$6.03	$4.52
2005	SD	$1.79	$5.39	$3.82

(National Agriculture Statistics Service 2014)

Table 3.3 shows the average cash rent from 2005-2016 in Codington County, SD. For years 2014-2016, I have projected that cash rent would stay flat. I predicted that cash rent would stay flat because of the projected decrease in commodity prices.

Table 3.3: Average Cash Rent – Codington County, SD 2005-2016

Year	Crop	Dollars/Acre	Net Returns - 40 Acres
2016	Wheat	$148	$5,920
2015	Soybeans	$148	$5,920
2014	Corn	$148	$5,920
2013	Wheat	$148	$5,920
2012	Soybeans	$127	$5,080
2011	Corn	$106	$4,240
2010	Wheat	$89	$3,540
2009	Soybeans	$84	$3,340
2008	Corn	$77	$3,060
2007	Wheat	$77	$3,084
2006	Soybeans	$70	$2,816
2005	Corn	$67	$2,672

(National Agriculture Statistics Service 2014)

Table 3.4 shows the annual average input costs for producing corn, soybeans and wheat for the geographical region called the heartland from 2005-2016. The custom operation charge is for applying fertilizer and chemicals. The Economic Research Service had the projected production costs for 2014-2016 (McBride 2014).

Table 3.4: Annual Average Production Costs – Heartland 2005-2016

		Dollars/Acre		
Year	Crop	Seed	Fertilizer	Chemical
2016	Wheat	$17.80	$39.81	$14.65
2015	Soybeans	$67.18	$21.81	$18.06
2014	Corn	$97.91	$136.87	$28.18
2013	Wheat	$17.49	$42.63	$14.65
2012	Soybeans	$60.81	$23.98	$17.10
2011	Corn	$90.78	$155.18	$26.95
2010	Wheat	$21.85	$76.70	$8.84
2009	Soybeans	$53.50	$22.01	$16.87
2008	Corn	$61.29	$146.62	$27.68
2007	Wheat	$20.19	$65.27	$5.14
2006	Soybeans	$32.01	$12.73	$14.38
2005	Corn	$41.23	$72.67	$24.71

(Economic Research Service 2014)

Table 3.4: Continued – Annual Average Production Costs – Heartland 2005-2016

		Dollars/Acre	
Year	Crop	Custom Operations	Interest
2016	Wheat	$10.79	$0.56
2015	Soybeans	$7.84	$0.74
2014	Corn	$17.81	$0.71
2013	Wheat	$10.48	$0.09
2012	Soybeans	$6.33	$0.09
2011	Corn	$15.53	$0.17
2010	Wheat	$10.18	$0.14
2009	Soybeans	$6.03	$0.17
2008	Corn	$9.80	$2.16
2007	Wheat	$6.13	$2.61
2006	Soybeans	$5.27	$2.04
2005	Corn	$8.99	$3.07

(Economic Research Service 2014)

The South Dakota extension service does not publish annual custom farming rates but does recommend using either Iowa State University or North Dakota State University custom rate surveys. Because Iowa State publishes a survey every year I will use their survey in the analysis. To project 2014-2016 custom rates I worked with Dr. William Edwards from Iowa State University. Annually custom rates increase about 5% but are heavily dependent on fuel costs according to Iowa State University. For this analysis, I used a 5% projected increase in custom farming rate per year. In the custom farming rate analysis you will notice that rock picking is only done during the soybean crop year. This is because when combing soybeans the header is on the ground and damage could occur if a rock would enter into the combine. Table 3.5 shows the average custom farming rates for Iowa in dollars per acre except for hauling grain which is in dollars per bushel (Edwards 2014).

Table 3.5: Average Custom Farming Rates (Dollars/Acre) – 2005-2016

Year	Crop	Spring Tillage - Field Cultivating	Planting/Seeding with Liquid Fertilizer	Rock Picking/Rolling
2016	Wheat	$15.45	$17.25	
2015	Soybeans	$14.72	$18.30	$14.83
2014	Corn	$14.02	$19.37	
2013	Wheat	$13.35	$14.90	
2012	Soybeans	$12.30	$15.60	$12.90
2011	Corn	$11.45	$15.70	
2010	Wheat	$10.85	$13.00	
2009	Soybeans	$10.70	$16.60	$11.70
2008	Corn	$10.10	$14.60	
2007	Wheat	$9.05	$10.50	
2006	Soybeans	$8.45	$11.45	$11.30
2005	Corn	$8.00	$12.15	

Year	Crop	Harvest	Hauling Grain to Market 25 Miles (Per Bushel)	Chopping Corn Stalks
2016	Wheat	$34.38	$0.19	
2015	Soybeans	$35.28	$0.18	
2014	Corn	$34.55	$0.17	$11.97
2013	Wheat	$29.70	$0.17	
2012	Soybeans	$31.10	$0.16	
2011	Corn	$30.90	$0.16	$10.35
2010	Wheat	$27.20	$0.15	
2009	Soybeans	$28.70	$0.15	
2008	Corn	$28.10	$0.15	$9.50
2007	Wheat	$23.70	$0.13	
2006	Soybeans	$25.00	$0.12	
2005	Corn	$24.60	$0.11	$7.45

Year	Crop	Fall Tillage - Chisel Plow	Fall Tillage - Tandem Disk	Fall Tillage - Disk Chisel
2016	Wheat		$15.74	
2015	Soybeans	$16.75		
2014	Corn			$16.85
2013	Wheat		$13.60	
2012	Soybeans	$14.90		
2011	Corn			$14.95
2010	Wheat		$11.60	
2009	Soybeans	$15.20		
2008	Corn			$13.90
2007	Wheat		$9.45	
2006	Soybeans	$11.80		
2005	Corn			$12.20

(Edwards and Johanns, Iowa Farm Custom Rate Survey 2014)

3.2 Business Plan Outline

Small farms should manage their operation similar to larger agricultural enterprises to ensure long-run success and sustainability. A business plan is an essential roadmap. To lay a roadmap of my farming operation, I will create a business plan. Typical business plans will include the following (Jones 2000):

- Mission Statement – the purpose of the business
- Strategic Plan – future plans including short-term and long-term goals
- Marketing Plan – overall marketing efforts
- Operations Plan – describes the physical necessities of your business' operation
- Financial Plan – primary financial statements including an income statement, cash flow statement and balance sheet
- Contracts – written contracts between land owner and custom operator

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CHAPTER IV: RESULTS AND DISCUSSION

4.1 Net returns between Custom Farming, Cash Rent and Crop-Share Rent

In this section, I have a 12-year analysis showing the net returns from each of the three options: custom farming, cash rent or crop-share rent. Table 4.1 compares the net returns between the options using the cash accounting method for the past eight years and projected next four years with a corn, soybean, and wheat rotation. The option that provided the highest net returns from 2005 – 2006 is to have the land cash rented. From 2007 through 2014 the option that provided the highest net returns was to have the land custom farmed. The income peaked in 2011 at $19,607 for custom farming compared to $4,240 for cash rent. In 2012, net returns were also very strong at $10,706 or about double of cash rent. The future does not look the brightest for custom farming with the projected commodity prices. In 2015, cash rent is projected to provide net returns of $5,920 compared to custom farming of $3,666. If commodity prices fall even more like what are projected the net returns from custom farming in 2016 would be $1,700. When you look at crop-share through the 12-year analysis it follows the trend of custom farming but the variability is less. Below are the long run (12-year net returns) profits for each option:

- Custom Farming – $83,952
- Cash Rent – $51,512
- Crop-Share 50/50 – $60,573

Table 4.1: Net Returns - Custom Farming, Cash Rent and Crop-Share (2005-2008)

Year	2005	2006	2007	2008
Crop	Corn	Soybeans	Wheat	Corn
Custom Farming				
Cash Expenses				
Crop Production	$6,027	$2,657	$3,974	$9,902
Custom Farming	$2,580	$2,725	$2,113	$3,054
Total Cash Expenses	$8,607	$5,382	$6,087	$12,956
Revenue				
Selling Crop	$11,112	$7,598	$14,190	$20,412
Total Revenue	$11,112	$7,598	$14,190	$20,412
Net Returns	$2,505	$2,216	$8,103	$7,456
Cash Rent				
Revenue				
Fixed Cash Rent	$2,672	$2,816	$3,084	$3,060
Net Returns	$2,672	$2,816	$3,084	$3,060
Crop-Share 50/50				
Expenses				
Crop Production	$3,013	$1,329	$1,987	$4,951
Revenue				
Selling Crop	$5,556	$3,799	$7,095	$10,206
Net Returns	$2,543	$2,470	$5,108	$5,255

Table 4.2: Net Returns - Custom Farming, Cash Rent and Crop-Share (2009-2012)

Year	2009	2010	2011	2012
Crop	Soybeans	Wheat	Corn	Soybeans
Custom Farming				
Cash Expenses				
Crop Production	$3,943	$4,708	$11,544	$4,332
Custom Farming	$3,322	$2,512	$3,340	$3,479
Total Cash Expenses	$7,265	$7,220	$14,885	$7,811
Revenue				
Selling Crop	$12,485	$15,747	$34,492	$18,517
Total Revenue	$12,485	$15,747	$34,492	$18,517
Net Returns	$5,220	$8,527	$19,607	$10,706
Cash Rent				
Revenue				
Fixed Cash Rent	$3,340	$3,540	$4,240	$5,080
Net Returns	$3,340	$3,540	$4,240	$5,080
Crop-Share 50/50				
Expenses				
Crop Production	$1,972	$2,354	$5,772	$2,166
Revenue				
Selling Crop	$6,242	$7,874	$17,246	$9,258
Net Returns	$4,271	$5,519	$11,474	$7,092

Table 4.3: Net Returns - Custom Farming, Cash Rent and Crop-Share (2013-2016)

Year	2013	2014	2015	2016
Crop	Wheat	Corn	Soybeans	Wheat
Custom Farming				
Cash Expenses				
Crop Production	$3,414	$11,259	$4,625	$3,952
Custom Farming	$2,869	$3,877	$4,002	$3,321
Total Cash Expenses	$6,282	$15,136	$8,628	$7,273
Revenue				
Selling Crop	$14,440	$21,224	$12,294	$8,973
Total Revenue	$14,440	$21,224	$12,294	$8,973
Net Returns	$8,158	$6,088	$3,666	$1,700
Cash Rent				
Revenue				
Fixed Cash Rent	$5,920	$5,920	$5,920	$6,000
Net Returns	$5,920	$5,920	$5,920	$5,920
Crop-Share 50/50				
Expenses				
Crop Production	$1,707	$5,630	$2,313	$1,976
Revenue				
Selling Crop	$7,220	$10,612	$6,147	$4,487
Net Returns	$5,513	$4,982	$3,834	$2,511

4.2 Risk Analysis between Custom Farming, Cash Rent and Crop-Share Rent

Table 4.4 shows the income variability between custom farming, cash rent, and crop-share. Cash rent has less variability in net returns and has the highest minimum income of the three options. The only option to guarantee me an income of at least $2,672 every year is cash rent.

Table 4.4: Income Variability Analysis

	Minimum Income	**Maximum Income**	**Average Income**
Custom Farming	$1,700	$19,607	$6,996
Cash Rent	$2,672	$5,920	$4,293
Crop-Share	$2,470	$11,474	$5,048

4.3 Hauger Farm Business Plan

Mission Statement

Hauger Farm mission is to produce high yielding crops while being good stewards of the land. Hauger Farm will also be a pivotal asset at learning agronomic, marketing and financial information related to production agriculture. Keys to success will be making sound financial and economic decisions. The ultimate mission is to maximize net returns over the long run.

Goals

At Hauger Farm we have some specific short-term and long-term goals. These goals will help establish Hauger Farm and make it sustainable.

Short Term

- Maximize net returns by having the land custom farmed
- Learn agronomic, marketing and financial information in production agriculture
- Try to achieve a yield for corn of 150 bushels per acre the first year
- Establish a strong relationship with the custom operator, local elevator and crop insurance agent

Long Term

- Establish a corn, soybean and wheat rotation on the 40 acres
- Maximize net returns by having the land custom farmed
- Apply the necessary nutrients to make the land the most productive
- Work with a farm tax agent to maximize benefits when filing taxes
- Improve the land by removing the rock piles, trees and installing drainage tile
- Expand the farming operation by purchasing land in South Dakota or Kansas

Background Information

Hauger Farm was established in September 2013 after receiving 40 acres in Codington County, SD from my mother, Dianne Hauger. The 40 acres have been in the family since my great grandpa Michael Raml first homesteaded it in the early 1900's.

Business Name, Address and Telephone Number:

Hauger Farm – Michael and Jarah Hauger

18501 South Butternut Street

Gardner, KS 66030

Phone – (309)-236-8305

Type of Ownership:

Sole Proprietorship

Important Business Relationships:

Custom Operator
Raml Farms
Kenneth Raml
16930 465th Ave
Goodwin, SD
605-520-4872

Grain Elevator
Watertown Cooperative
Grain Department
811 Burlington Northern Dr
Watertown, SD
605-886-3039

Crop Consultant
Helena Chemical Company
Robert Hauger
120 1st Street West
Canby, MN 56220
507-223-7256

Crop Insurance Agent
Farm Credit Services
Jane Jasper
1323 9th Avenue SW
Watertown, SD
605-882-4037

A farm tax consultant will be added once I have established a relationship.

Operation Layout

Hauger Farm consists of 40 acres in Codington County, South Dakota. The owners include Michael and Jarah Hauger who live in Kansas and work full-time for John Deere in Olathe,

KS. A big key which allows us to farm is having a relationship with my uncle Kenny Raml who will provide the custom farming services. Kenny's farm is within the same section and only a quarter mile to the north. The 40 acres have previously been in a corn, soybean and small grain rotation with conventional tillage operations. Going forward the farm will continue to use conventional tillage with a corn, soybean, and wheat rotation. My brother Rob Hauger, who works for Helena Chemical Company, will be the agronomist for the 40 acres. Rob will be essential during the growing season as he will monitor the crop and recommend needed agronomic services. Grain will be marketed at the nearest elevator, the Watertown Coop. Some of the grain will be presold in a forward cash grain contract and the rest will be stored at onsite bins at Kenny's farm. Farm Credit Services of Watertown, SD will be used for crop insurance services. Figure 4.1, shows an aerial map of Hauger Farm and the proximity to where my uncle Kenny farms, who will be hired for the custom operations.

Figure 4.1: Hauger Farm

Legal and Contractual Situation

Contracts

At Hauger Farm we will have two types of contracts including a Custom Farming contract and Forward Cash Contract for marketing the grain.

2014 Custom Farming Contract

Parties

This contract is entered into by Kenneth Raml, contractor, of 16930 465th Avenue, Goodwin, SD 57238 and Michael Hauger, owner, of 18501 South Butternut Street, Gardner, KS 66030.

Description of Farm

The contractor agrees to perform custom farming operation for the owner on the following land: The North One-Half (N ½) of the North One Half (N ½) of the Southwest Quarter (SW ¼), Section Twenty-four (24), Township One Hundred Seventeen (117), Range Fifty-one (51)

Method of Payment

The contractor agrees to submit to the owner an itemized written statement of work completed after spring tillage, planting, harvesting and fall tillage. The owner agrees to make payment to the contractor within 30 days after receiving the statement.

Procurement of Supplies

The owner Michael and Jarah Hauger are responsible for the purchase and delivery of seed, fertilizer, chemicals and other supplies needed for production.

Insurance

Crop insurance will be taken out on the 40 acres. Farm Credit Services out of Watertown, SD will be the provider of the insurance.

Yearly Production Plan

In this section I will outline key activities that must happen in each month. These activities will be very similar every year. A few things like planting and harvest might change with the different crops in the rotation. The production plan below is for corn in 2014. A similar plan will be prepared in the preceding year for each year's crop.

January

- Prepay fertilizer, chemical and seed for the production year
- Sign custom farming contract with custom contractor

February - March

- Market grain through cash contracts or forward cash contracts
- Haul old crop grain to elevator
- Prepare and file taxes with farm tax accountant

April

- Deliver seed and liquid fertilizer to the custom contractor
- Prepare field for planting by rock picking and field cultivating
- Plant field with corn
- Apply pre-emergence herbicide

May – June

- Monitor crop progress
- Apply post-emergence herbicide

July – August

- Monitor crop progress

September

- Monitor crop progress and estimate yield
- Prepare storage needs for crop that is not on a forward cash contract

October

- Harvest corn
- Haul contracted corn to elevator
- Store excess grain in on farm storage at uncle Kenny's
- Prepare corn residue for fall tillage – stalk chopping

November

- Apply fall fertilizer if needed
- Perform fall tillage – disk chisel

December

- Update income statement for the year
- Consult with tax agent to determine if anything should be spent on the farm
- Review needs for next year with Helena Chemical Company and order chemical and seed
- Prepare next year's production plan

Farm Strategy and SWOT Analyses

Strengths

- No land payment as the farm was given to me from my mother
- No lease payments to collect since owner receives all of the crop

- Make most of the production and marketing decisions without investing in a full line of machinery
- Having relatives close by to help with the custom farming and crop consulting

Weaknesses

- Dependent on custom contractor for all field operations
- Lack of Economies of Scale – the cost advantages obtained due to size, throughput, or scale of operation
- Being 492 miles or seven hours away from the farm – hard to inspect crops and make timely decisions
- Being new to farming – not much experience
- Farm tax consultant, yet to be identified

Opportunities

- Land improvement to improve yields – remove rock piles and install drainage
- Purchasing more farm land to expand
- Increase in commodity prices – makes custom farming profitable
- Tax benefits and entitlement to government payments

Threats

- Farming economy takes a dive – commodity prices fall and margins shrink
- Weather uncertainty could hurt yields – drought or flood

Financial Statements

Table 4.5: Hauger Farm Balance Sheet

Assets		**Liabilities and Net Worth**	
Current Farm Assets	**Value**	**Current Farm Liabilities**	**Value**
Cash, checking, savings	$0.00	Accounts payable and accrued expenses	$5,155
Prepaid expenses & supplies	$12,368	Farm Land Taxes Due – April	$600
Total current farm assets	$12,368	Total current farm liabilities	$5,755
Intermediate Farm Assets		**Intermediate Farm Liabilities**	
Machinery and Equipment			
2009 Chevy Truck	$24,000		
John Deere 318 Lawn Mower	$2,000		
John Deere 520 Tractor	$3,000		
Other intermediate assets			
Shop Tools	$1,000		
Total intermediate assets	$30,000	Total intermediate farm liabilities	$0.00
Long-term Farm Assets		**Long-term Farm Liabilities**	
Farm Land @ $4,000/Acre	$160,000		
Total long-term farm assets	$160,000	Total long-term farm liabilities	$0.00
Total farm assets	$202,368	Total-farm liabilities	$5,755
Non-farm assets		**Non-farm liabilities**	
Bank Accounts, cash, savings	$7,000	Nebraska Furniture Mart	$3,000
House in Gardner, KS	$250,000	House in Gardner, KS	$194,000
Jeep Grand Cherokee	$8,500	Property Taxes	$1,900
TV, Furniture, etc.	$10,000		
Total non-farm assets	$265,500	Total non-farm liabilities	$198,900
Total assets	$467,868	Total liabilities	$204,655
		Net Worth	$263,213

Table 4.6: Hauger Farm Cash Flow Statement - Projected

	2014	2015	2016
Cash Inflow			
1. Beginning Cash Balance	$12,000	$18,691	$21,078
2. Crop Sales	$24,420	$12,294	$8,973
3. Total Cash Inflow (total 1 to 2)	$36,420	$30,985	$30,051
Cash Outflow			
4. Soil Sampling	$50	$50	$50
5. Chemicals	$1,404	$722	$674
6. Custom Hire	$3,877	$4,002	$3,321
7. Fertilizer	$6,754	$872	$1,961
8. Insurance	$951	$951	$951
9. Seed	$4,090	$2,687	$804
10. Taxes	$604	$622	$640
11. Total cash outflow (total 4 to 10)	$17,729	$9,907	$8,401
Cash Flow Summary			
12. Inflow minus outflow (lines 3-11)	$18,691	$21,078	$21,649
Ending cash balance	$18,691	$21,078	$21,649

Table 4.7: Hauger Farm Income Statement – 2014 Projections

Cash Farm Income		**Cash Farm Expenses**	
Crop Sales		Soil Sampling	$50
1000 Bushel 3/1/14 @ $4.21	$4,210	Fall Fertilizer	$4,664
1000 Bushel 3/13/14 @ $4.36	$4,360	Spring Fertilizer	$2,089
1000 Bushel 5/30/14 @ $4.45	$4,450	Seed	$4,089
3000 Bushel 10/28/14 @ $3.80	$11,400	Chemical	$1,404
		Custom Farming	$4,204
		Crop Insurance	$951
		Taxes	$603
Total Cash Farm Income	$24,420	Total Cash Operating Expense	$18,056
		Net Cash Farm Income	$6,363

Implementation Strategy

Production

Hauger Farm will plant corn in 2014, followed by soybeans in 2015 and spring wheat in 2016. I have chosen to have a three crop rotation because I can save seed costs when following corn into wheat stubble. This will be strategic to help cut input costs as commodity prices decrease. The ideal date for planting corn on Hauger Farm will be from April 25th – May 10th. My first year projected yield for corn is 150 bushel per acre. This will give me a total of 6,000 bushels of corn to market in 2014.

Management

Key management decisions will be made by Michael and Jarah Hauger including grain marketing, buying inputs, and making payments. Rob Hauger will be consulted when making agronomic decisions and monitor the crops throughout the growing season. Kenny Raml will be hired for the custom field work and grain hauling. Kenny will also be important during the crop season to monitor Hauger Farm because he lives close to Hauger Farm. If Michael and Jarah are unavailable to make decisions, Rob and Kenny will take over the management decisions. Farm management software will also be utilized on Hauger Farm. FarmsLogs, and application on the IPhone, will be utilized to monitor field rainfall and track farm operations.

Marketing

Grain produced at Hauger Farm will be sold through the Watertown Cooperative in Watertown, SD. Watertown Cooperative was chosen because of their close location to Hauger Farm which is about 15 miles. Watertown Coop also has a very competitive basis compared to the other elevators in the area. For 2014, Hauger Farm will forward cash

contract about half of the projected bushels or about 3,000 bushels. A forward cash contract was entered in on March 1, 2014 with the Watertown Cooperative for 1,000 bushels of new crop corn at a price of $4.21. Another contract was placed on March 13, 2014 selling 1,000 bushels at $4.36. For the 2014 crop year, I am estimating that Hauger Farm will sell corn at an average cash price of $4.07.

Human Resources

Owning and farming land 500 miles away makes it a challenge when it comes to the labor needed. However, with a custom farming contract, the labor needed for tillage, planting and harvest will come from the custom operator which makes it easy to manage. I still plan to be heavily active during spring and fall operations on Hauger Farm. As time and work permits, I will take vacation to help with planting and harvest operations. Managing the production and marketing activities will be done remotely in Kansas at night and during the weekends.

Finance/Accounting

Making sound financial decisions is a significant part for making Hauger Farm profitable in the long run. The first decision financially was to create a separate checking account for Hauger Farm. This checking account will receive all the farm income and pay all the farm expenses. The initial capital in the farm checking account came from our personal savings account but will be repaid after the 2014 harvest. The majority of the cash needed to operate Hauger Farm will be in January to purchase all the inputs of fertilizer, seed and chemical. Hauger Farm will consider taking out an operating loan in the coming years to cover the input costs instead of taking it from our personal savings account. Currently Hauger Farm is utilizing excel to manage the accounting and recordkeeping of the farm. In

the future, FarmLogs or another type of farm management software will be utilized. A current weakness that Hauger Farm has is a relationship with a farm tax accountant. A farm tax accountant can be a huge asset and advisor to any farm to help maximize your returns. In 2014, Hauger Farm will try to build a relationship with a local tax accountant in Kansas or South Dakota.

Exit Strategy

Current plans for Hauger Farm are to operate by having the land custom farmed for the next three years. If something were to happen to myself, Hauger Farm would go back to a cash rent agreement as the risk and time involved is very minimal. After the three years, Hauger Farm will analyze the net returns of having it custom farmed against other alternatives. If in the long-run it is more advantageous to crop-share or cash rent a decision will be made to go away from custom farming. Finally, if Hauger Farm were to purchase farm land in Kansas and the commitment to custom farm the land in South Dakota becomes too demanding the land will be crop-shared or cash rented.

CHAPTER V: CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Land owners have many options with their land including custom farming, cash renting or crop-share renting. Each option has it pros and cons with different levels of risks associated with each option. Common economics says, the higher the risk the higher for potential profits. A business plan is also essential for any size of farm as it will set goals, organize responsibility, develop a production plan and operation strategy, and build essential financial plans.

My first objective in this thesis was to measure the net returns provided from the three options. The option that provided the highest return in the long run was having the land custom farmed, which earned a net returns over 12 years of $83,952. Now, before a land owner makes the decision to go with the option providing the highest return you also want to know the risks associated with each option and opportunity cost of land. Custom farming will have the most risk as income will be the most variable year to year. If you are a land owner who does not want to take on that much risk crop-share might be the answer. Crop-share earned net returns over the 12 years of $60,573. Crop-share usually builds a longer lasting relationship between the land owner and tenant which makes for a longer lease agreement. Crop-share also will reward the land owner when markets are good but also carries risk when the commodity markets decrease. The recent trend in the farming industry is to go towards a cash rent type lease. Cash rent carries the least risk as payments are made up front before planting. Cash rent generally is used by smaller land owners and absentee land owners who live out of the state (Dhuyvetter 2014). The 12-year analysis

shows that cash rent provided the least net returns at $51,512 but that makes sense because it has the lowest risk.

Another objective of the thesis was to create a business plan for Hauger Farm. Hauger Farm mission is to produce high yielding crops while being good stewards of the land. Hauger Farm will also be pivotal at learning agronomic, marketing and financial information related to production agriculture. Keys to success will be making sound financial and economic decisions. Short term goals include maximizing net returns and learning agronomic information about production agriculture. Long term goals include removing the rock piles, installing drainage and expanding the farm by purchasing more farm land. Key strengths on Hauger Farm include having the land paid for and being close to my relatives. Weaknesses include lack of economies of scale and distance from farm land. Increasing yield and tax benefits are opportunities for Hauger Farm. The main threats that Hauger Farm might face include weather uncertainty and if commodity prices fall. Net farm income on Hauger Farm is projected at $6,363 the first year. An implementation strategy was developed including strategies for production, management, marketing, human resources, and finance. If something was to happen to myself or in the long run it became more adventitious to cash rent an exit strategy has been developed. A business plan was prepared for the 2014 crop year. The business plan will need to be updated each crop year.

5.1 Recommendations

My recommendation to myself and other young land owners, who want to keep the land, is to examine the pros and cons with each option before making a decision. Here are some generalizations I have come up with after writing the thesis:

- If a land owner is looking to make the most income from the land, wants to farm; but has limited time to invest in farming, and is not concerned about risk, the land should be custom farmed
- If a land owner wants to build a relationship with the tenant and would like to gain profits when markets and yields are good, the land should be crop-shared
- If a land owner wants a steady income without risk and management, the land should be cash rented

5.2 Suggestions for Further Research

A few suggestions I have for further research include: flexible farm leases and tax benefits for farmers. Both of these might have an impact on the decision young land owners make with their land as the farm commodity prices drop.

Uncertain yields and unstable markets make it difficult to arrive at a fair cash rental rate for the landlord and tenant each year. To combat this problem, some owners and tenants use a flexible cash lease where the rent is not determined until after the crop is harvested. The final rental rate is determined based on the actual yields and commodity prices. Advantages of a flexible lease include the following: (Edwards 2014)

- The actual rent will adjust as yields or prices fluctuate
- Profit and risk are shared between the land owner and tenant
- Land owners are paid in cash and do not have to be involved in management activities

For more research, I would recommend reviewing the information published by the Iowa State Extension service on flexible farm lease agreements.

One opportunity stated in the Business Plan for Hauger Farm was the potential for tax benefits. This could play a critical role in the decision to have farm land custom farmed. By having the land custom farmed Hauger Farm will be able to file a schedule F tax form. By filing a schedule F it will allow Hauger Farm to deduct certain expenses related to the farm like mileage and depreciation of vehicles. This is one area in which I would like to do further research and to find all the benefits related to farm taxes. I would recommend to other young land owners to consult with their local tax agent or state farm management consultants.

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