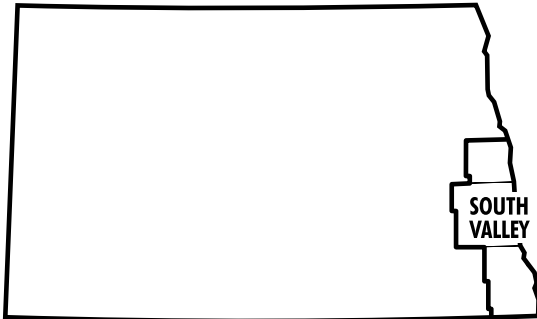




FARM MANAGEMENT PLANNING GUIDE

December 2018

Projected 2019 Crop Budgets



South Valley North Dakota

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The contributions of NDSU Extension Specialists: Ron Haugen, Frayne Olson, Janet Knodel, Sam Markell, Andrew Friskop, Greg Endres, Hans Kandel, Joel Ransom and Lesley Lubenow are acknowledged. The information provided by agronomists, crop input suppliers, crop processors and producers throughout North Dakota is also acknowledged.

The 2019 crop budgets provide an estimate of revenues and costs for selected crops. Each set of budgets are developed for a multi-county region. There is considerable variation in soil type and productivity, weather conditions, as well as management and production practices within each region. Therefore, **THESE BUDGETS ARE ONLY INTENDED TO BE USED AS A GUIDE. EVERY INDIVIDUAL IS HIGHLY ENCOURAGED TO DEVELOP HIS/HER OWN BUDGETS!**

The profitability budget accounts for full economic opportunity costs for land and machinery investment, regardless of farm operator equity position. The bottom line is the return to labor and management. This is the expected "payment" to the producer for the labor and managerial efforts required by the crop enterprise. Each individual must make the decision whether it is sufficient.

The budget can be changed to conform to the more common definition of accounting profit (return to

unpaid labor and management, and owner equity) by replacing the machinery investment and land charge cost items with your per acre interest and rental expense of machinery and land, and real estate tax if land is owned.

The budget can be used for long run decisions if the revenues and costs are realistic for several years. (Crop prices, direct costs, and the land charge are best estimates for only the 2019 crop year, but crop yields are historic averages and machinery ownership costs are an average for the total length of ownership). If the budget shows a high return to labor and management, and is representative for several years, increased acreage and corresponding investment should be considered. However, if long-run returns to labor and management are unsatisfactory the best decision may be to exit the crop enterprise and employ the machinery and land investment, and labor and management, in a different enterprise or investment.

For short-run planning decisions you can omit the indirect costs if the land and machinery required to produce the different enterprises are in place. Simply compare the crop enterprises by calculating return over direct costs. Labor requirements and risk should also be considered. Insurance is not available for some crops.

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The budget can be used to estimate cashflow by making a few modifications. Machinery depreciation should be omitted and the machinery investment number replaced with your per acre principal and interest payment on machinery debt. For owned land, the land charge should be replaced with your per acre real estate tax and principal and interest payment on land debt.

The 2018 Farm Bill continues the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs. PLC and ARC payments have been omitted from the budgets because those payments, if any, are tied to historic farm program base acres, not to current crop selection or production.

Primary Assumptions:

Crops are planted on dryland recrop ground. Costs of moving crop to local market/storage are included.

Market Price: Best estimates of NDSU extension economists. The greater of projected market price and marketing loan rate is used.

Market Yields: Average yield for the 7 year period 2011-2017, after the low and high yield years are removed. Yields for safflower, yellow mustard, buckwheat, millet, rye and chickpeas are from NDSU extension agronomists and industry sources.

Fertilizer: Cost of fertilizer applied, based on soil test, to meet yield goal. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Soil test - recrop:
 Nitrogen - 31 lb
 Phosphorus - 10 ppm
 Potassium - 278 ppm

Fertilizer prices:
 Nitrogen - .43/lb
 Phosphorus - .45/lb
 Potassium - .31/lb

Seed Prices:

Spring Wheat	10.25/bu
Barley	8.25/bu
Corn GM	2.78/thou.kern.
Soybean GM	.33/thou.kern.
Dry Beans	.68/thou.kern.
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.70/thou.kern.
Oats	6.50/bu
Winter Wheat	9.50/bu

Fuel prices:

Diesel	2.20/gal
Gas	2.45/gal

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers, field peas, dry beans and lentils with a 75% coverage level and enterprise units. APH insurance was used for other crops for which 70% coverage and optional units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 5.85% interest for 6 month period.

Misc. Overhead: Machinery housing and insurance at .5% and .85%, respectively, of average machinery investment. Also, liability insurance and license fees of trucks. In addition, \$4.00 per acre is assumed for general farm utilities, farm publications, meetings, dues, income tax preparation, legal fees, etc.

Land charge = average cash rent.

Machinery investment: 4.5% real interest rate, over the years of machine ownership, is charged on average machinery investment. The real, or inflation adjusted, rate is the commercial rate minus the inflation rate. Ave. mach. investment = (Purchase price + Disposal price)/2

Depreciation = (Purchase price - disposal price / years ownership)

Spring Wheat

Malting Barley

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	64	_____	80	_____
Market Price	5.72	_____	3.24*	_____
MARKET INCOME	366.08	_____	259.20	_____
DIRECT COSTS				
-Seed	20.50	_____	16.50	_____
-Herbicides	22.50	_____	19.70	_____
-Fungicides	17.00*	_____	17.00**	_____
-Insecticides	0.00**	_____	0.00	_____
-Fertilizer	91.12	_____	67.09	_____
-Crop Insurance	5.10	_____	4.90	_____
-Fuel & Lubrication	16.33	_____	17.00	_____
-Repairs	21.16	_____	21.36	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.00	_____	8.00	_____
-Operating Interest	5.90	_____	5.02	_____
SUM OF LISTED DIRECT COSTS	207.62	_____	176.57	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.05	_____	9.30	_____
-Machinery Depreciation	24.73	_____	25.36	_____
-Machinery Investment	14.62	_____	14.90	_____
-Land Charge	119.00	_____	119.00	_____
SUM OF LISTED INDIRECT COSTS	167.39	_____	168.56	_____
SUM OF ALL LISTED COSTS	375.01	_____	345.13	_____
RETURN TO LABOR & MANAGEMENT	(8.93)	_____	(85.93)	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.24	_____	2.21	_____
-Indirect Costs	2.62	_____	2.11	_____
-Total Costs	5.86	_____	4.31	_____

Spring Wheat notes:

*Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

**Cereal grain aphid insecticide would cost about \$4.

Barley notes:

*There is risk of not making malting barley quality. Use \$2.40 for feed barley.

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide which is recommended when conditions are favorable for fusarium head blight (scab).

Corn Grain

Soybeans

	Your Per Acre	Figures	Your Per Acre	Figures
Market Yield	150		38	
Market Price	3.30		8.22	
MARKET INCOME	495.00		312.36	
DIRECT COSTS				
-Seed	93.13*		64.10*	
-Herbicides	27.00		32.00	
-Fungicides	0.00		0.00	
-Insecticides	0.00		4.00**	
-Fertilizer	110.11		3.33	
-Crop Insurance	11.90		6.00	
-Fuel & Lubrication	22.50		13.39	
-Repairs	28.49		19.42	
-Drying	27.00		0.00	
-Miscellaneous	8.00		1.50	
-Operating Interest	9.60		4.20	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	337.73		147.96	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	12.08		8.39	
-Machinery Depreciation	38.57		22.92	
-Machinery Investment	22.10		13.33	
-Land Charge	119.00		119.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	191.76		163.65	
SUM OF ALL LISTED COSTS	529.49		311.61	
RETURN TO LABOR & MANAGEMENT	(34.49)		0.75	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	2.25		3.89	
-Indirect Costs	1.28		4.31	
-Total Costs	3.53		8.20	

Corn notes:

*GM corn with herbicide tolerance and above ground insect control traits.

Soybean notes:

*GM soybeans with herbicide tolerance. The cost includes \$8 for inculant and fungicide treatment in addition to seed expense.

**Soybean aphid and/or spider mite insecticide.

Drybeans

Oil Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1950		1910	
Market Price	0.21		0.169	
MARKET INCOME	409.50		322.79	
DIRECT COSTS				
-Seed	56.10		36.00	
-Herbicides	46.90*		27.70	
-Fungicides	20.00**		0.00*	
-Insecticides	0.00		5.00**	
-Fertilizer	51.37		49.55	
-Crop Insurance	13.00		9.00	
-Fuel & Lubrication	15.03		15.56	
-Repairs	22.32		20.05	
-Drying	0.00		5.73	
-Miscellaneous	16.00		16.00	
-Operating Interest	7.04		5.40	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	247.76		189.99	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.04		9.43	
-Machinery Depreciation	27.14		26.37	
-Machinery Investment	15.70		16.05	
-Land Charge	119.00		119.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	170.89		170.84	
SUM OF ALL LISTED COSTS	418.64		360.84	
RETURN TO LABOR & MANAGEMENT	(9.14)		(38.05)	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.13		0.10	
-Indirect Costs	0.09		0.09	
-Total Costs	0.21		0.19	

Drybean notes:

*Includes dessicant prior to straight cutting.

**Fungicide for white mold. A second treatment may be necessary. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$8 is under "Miscellaneous."

Confection Sunflower

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1670	_____	90	_____
Market Price	0.233	_____	2.33	_____
MARKET INCOME	389.11	_____	209.70	_____
DIRECT COSTS				
-Seed	54.00	_____	13.00	_____
-Herbicides	29.90	_____	5.40	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	10.00**	_____	0.00	_____
-Fertilizer	41.65	_____	64.39	_____
-Crop Insurance	12.70	_____	7.20	_____
-Fuel & Lubrication	15.19	_____	18.43	_____
-Repairs	19.84	_____	22.35	_____
-Drying	5.01	_____	0.00	_____
-Miscellaneous	24.00	_____	8.00	_____
-Operating Interest	6.21	_____	4.06	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	218.50	_____	142.83	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.29	_____	9.78	_____
-Machinery Depreciation	25.96	_____	26.95	_____
-Machinery Investment	15.84	_____	16.15	_____
-Land Charge	119.00	_____	119.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	170.09	_____	171.88	_____
SUM OF ALL LISTED COSTS	388.59	_____	314.71	_____
RETURN TO LABOR & MANAGEMENT	0.52	_____	(105.01)	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.13	_____	1.59	_____
-Indirect Costs	0.10	_____	1.91	_____
-Total Costs	0.23	_____	3.50	_____

Confection Sunflower notes:

*Fungicide for rust would cost \$4 plus application.

**Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$5 per application. Each custom application cost of \$8 is under "Miscellaneous."

Winter Wheat

	Per Acre	Your Figures
Market Yield	60	_____
Market Price	4.98*	_____
MARKET INCOME	298.80	_____
DIRECT COSTS		
-Seed	12.35	_____
-Herbicides	24.50	_____
-Fungicides	9.00	_____
-Insecticides	0.00	_____
-Fertilizer	84.60	_____
-Crop Insurance	5.00	_____
-Fuel & Lubrication	14.61	_____
-Repairs	19.51	_____
-Drying	0.00	_____
-Miscellaneous	8.00	_____
-Operating Interest	5.19	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	182.76	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	8.60	_____
-Machinery Depreciation	23.03	_____
-Machinery Investment	13.26	_____
-Land Charge	119.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	163.89	_____
SUM OF ALL LISTED COSTS	346.65	_____
RETURN TO LABOR & MANAGEMENT	(47.85)	_____
LISTED COSTS PER BUDGET UNIT	(bu):	
-Direct Costs	3.05	_____
-Indirect Costs	2.73	_____
-Total Costs	5.78	_____

Winter Wheat notes:

*Yield is per harvested acre. There is some risk of acreage abandonment in spring.

2019 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 150HP Tractor	138400	400 hr	20	43309	11.89 /hr	10.22 /hr	13.67 /hr	
FWA 190HP Tractor	182000	500 hr	15	52235	17.30 /hr	10.54 /hr	17.98 /hr	
4WD 370HP Tractor	259500	500 hr	15	74521	24.66 /hr	15.03 /hr	14.65 /hr	
SP Combine (base unit)	295100	250 hr	12	71234	74.62 /hr	32.97 /hr	46.49 /hr	
Tandem Truck (used)	39900	150 hr	15	12700	12.09 /hr	7.89 /hr	8.17 /hr	
Semi & Trailer (used)	46800	150 hr	10	13300	22.33 /hr	9.02 /hr	10.13 /hr	
Pick-up Truck	33600	300 hr	10	7700	8.63 /hr	3.10 /hr	3.85 /hr	
Swather 30 ft	31100	1000 ac	20	7354	1.19 /ac	0.86 /ac	0.50 /ac	13.1
Sprayer 90 ft	40100	5000 ac	10	19912	0.40 /ac	0.27 /ac	0.51 /ac	42.5
Chisel Plow 38 ft	46300	3000 ac	15	27018	0.43 /ac	0.55 /ac	1.03 /ac	19.6
Field Cultivator 48 ft	53500	3000 ac	15	31240	0.50 /ac	0.64 /ac	0.94 /ac	24.7
Tandem Disk 28 ft	35500	800 ac	20	10145	1.58 /ac	1.28 /ac	0.90 /ac	13.6
Heavy Harrow 70 ft	32000	2000 ac	20	18712	0.33 /ac	0.57 /ac	0.36 /ac	39.7
Air Seeder 40 ft	183500	2400 ac	10	93777	3.73 /ac	2.59 /ac	6.35 /ac	17.0
Planter 24-22	139700	1600 ac	15	58103	3.40 /ac	2.78 /ac	5.27 /ac	15.6
Corn head 12R w/chopper	129700	1000 ac	15	24834	6.99 /ac	3.48 /ac	2.74 /ac	7.5
Grain head w/pu	19000	800 ac	20	1840	1.07 /ac	0.59 /ac	0.29 /ac	10.2
Grain str. cut 35 ft	31300	1000 ac	15	6522	1.65 /ac	0.85 /ac	0.41 /ac	11.9
Head w/sunf pans	37700	600 ac	20	3945	2.81 /ac	1.56 /ac	0.50 /ac	11.9
Flex head 35 ft	45800	1000 ac	20	4361	2.07 /ac	1.13 /ac	0.61 /ac	11.9
Grain Cart	37200	100 hr	20	6300	15.45 /hr	9.79 /hr	8.75 /hr	
Grain auger	13700	50 hr	20	790	12.91 /hr	6.52 /hr	5.10 /hr	

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