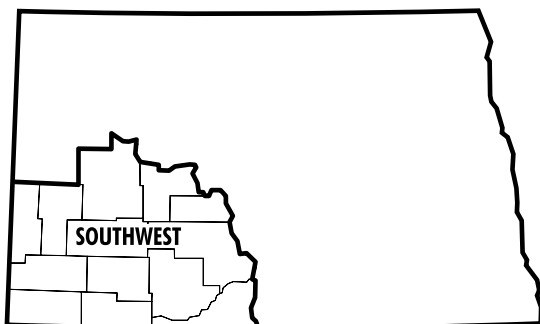




FARM MANAGEMENT PLANNING GUIDE

January 2021

Projected 2021 Crop Budgets



South West North Dakota

Ron Haugen, Farm Management Specialist

Note: This region consists of thirteen counties:
Adams, Billings, Bowman, Dunn, Golden Valley, Grant,
Hettinger, Mercer, Morton, Oliver, Sioux, Slope and Stark.

The 2021 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 2021 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.

The budgets for the South West, North West, South Central and North Central regions typically represent production systems where soil disturbance only occurs at seeding.

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 2013-2019, 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.

Fertilizer prices:

Nitrogen	- .39/lb
Phosphorus	- .44/lb
Potassium	- .27/lb

Seed Prices:

Spring Wheat	11.50/bu
Durum	13.00/bu
Barley	9.50/bu
Corn GM	2.69/thou.kern.
Soybean GM	.34/thou.kern.
Oil Sunflower	1.55/thou.kern.
Conf. Sunflower	2.75/thou.kern.
Canola	11.30/lb
Flax	18.50/bu
Field Peas	14.00/bu
Oats	6.25/bu
Lentils	.30/lb
Mustard	2.10/lb
Safflower	.45/lb
Buckwheat	.40/lb
Millet	.45/lb
Large Chickpeas	.40/lb
Winter Wheat	9.00/bu
Rye	8.00/bu

Fuel prices:

Diesel	2.00/gal
Gas	2.10/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 4.5% 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: 4.0% 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

Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	42	_____	41	_____
Market Price	5.58	_____	6.31*	_____
MARKET REVENUE	234.36	_____	258.71	_____
DIRECT COSTS				
-Seed	17.25	_____	22.75	_____
-Herbicides	25.80	_____	25.80	_____
-Fungicides**	5.00	_____	5.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	45.24	_____	43.80	_____
-Crop Insurance	5.00	_____	6.50	_____
-Fuel & Lubrication	9.28	_____	9.24	_____
-Repairs	16.44	_____	16.41	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.25	_____	8.25	_____
-Operating Interest	2.98	_____	3.10	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	135.24	_____	140.85	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.58	_____	7.56	_____
-Machinery Depreciation	18.67	_____	18.61	_____
-Machinery Investment	10.45	_____	10.42	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	73.70	_____	73.59	_____
SUM OF ALL LISTED COSTS	208.94	_____	214.44	_____
RETURN TO LABOR & MANAGEMENT	25.42	_____	44.27	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.22	_____	3.44	_____
-Indirect Costs	1.75	_____	1.79	_____
-Total Costs	4.97	_____	5.23	_____

Wheat notes:

*Durum price is for milling quality. There is risk of lower quality and lower price.

**Includes seed treatment and early season foliar fungicide. Although late season fungicides are often not common in this region, prothioconazole, metconazole, or pydiflumetofen containing products are recommended for fusarium head blight (scab) control when conditions are favorable for infection.

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

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	59	_____	92	_____
Market Price	5.06*	_____	3.80	_____
MARKET REVENUE	298.54	_____	349.60	_____
DIRECT COSTS				
-Seed	12.83	_____	61.87*	_____
-Herbicides	24.30	_____	21.00	_____
-Fungicides	5.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	37.18	_____	51.77	_____
-Crop Insurance	5.50	_____	10.00**	_____
-Fuel & Lubrication	10.03	_____	12.77	_____
-Repairs	16.93	_____	20.21	_____
-Drying	0.00	_____	16.02	_____
-Miscellaneous	8.25	_____	8.25	_____
-Operating Interest	2.70	_____	4.54	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	122.72	_____	206.43	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.90	_____	9.95	_____
-Machinery Depreciation	19.58	_____	30.82	_____
-Machinery Investment	10.93	_____	16.84	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	75.41	_____	94.61	_____
SUM OF ALL LISTED COSTS	198.13	_____	301.04	_____
RETURN TO LABOR & MANAGEMENT	100.41	_____	48.56	_____
LISTED COSTS PER BUDGET UNIT				
	(bu):		(bu):	
-Direct Costs	2.08	_____	2.24	_____
-Indirect Costs	1.28	_____	1.03	_____
-Total Costs	3.36	_____	3.27	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$2.94 for feed barley.

**Includes seed treatment and early season foliar fungicide. Although late season fungicides are often not common in this region, prothioconazole, metconazole, or pydiflumetofen containing products are recommended for fusarium head blight (scab) control when conditions are favorable for infection.

Corn notes:

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

**Crop insurance is only available in Billings county by written agreement.

Soybeans

Oil Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	30		1500	
Market Price	10.10		0.198	
MARKET REVENUE	303.00		297.00	
DIRECT COSTS				
-Seed	62.40*		32.55	
-Herbicides	20.00		34.00	
-Fungicides	0.00		0.00*	
-Insecticides	0.00		5.00**	
-Fertilizer	2.47		28.37	
-Crop Insurance	6.00**		7.00	
-Fuel & Lubrication	9.22		9.86	
-Repairs	16.76		17.54	
-Drying	0.00		4.59	
-Miscellaneous	5.00		16.75	
-Operating Interest	2.74		3.50	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	124.59		159.16	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.66		8.16	
-Machinery Depreciation	19.78		21.41	
-Machinery Investment	11.16		12.22	
-Land Charge	37.00		37.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	75.60		78.79	
SUM OF ALL LISTED COSTS	200.19		237.95	
RETURN TO LABOR & MANAGEMENT	102.81		59.05	
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	4.15		0.106	
-Indirect Costs	2.52		0.053	
-Total Costs	6.67		0.159	

Soybean notes:

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

**Crop insurance is only available by written agreement in some counties of region.

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." Foliar applied insecticide for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

Confection Sunflower

Canola

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1290	_____	1850	_____
Market Price	0.262	_____	0.19	_____
MARKET REVENUE	337.98	_____	351.50	_____
DIRECT COSTS				
-Seed	49.50	_____	56.50	_____
-Herbicides	36.20	_____	23.10	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	10.00**	_____	0.00	_____
-Fertilizer	22.26	_____	64.66	_____
-Crop Insurance	16.50	_____	11.50	_____
-Fuel & Lubrication	9.57	_____	9.95	_____
-Repairs	17.35	_____	17.72	_____
-Drying	4.02	_____	0.00	_____
-Miscellaneous	25.25	_____	8.25	_____
-Operating Interest	4.29	_____	4.31	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	194.94	_____	195.99	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.03	_____	7.83	_____
-Machinery Depreciation	21.05	_____	21.00	_____
-Machinery Investment	12.03	_____	11.55	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	78.11	_____	77.38	_____
SUM OF ALL LISTED COSTS	273.05	_____	273.37	_____
RETURN TO LABOR & MANAGEMENT	64.93	_____	78.13	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.151	_____	0.106	_____
-Indirect Costs	0.061	_____	0.042	_____
-Total Costs	0.212	_____	0.148	_____

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." Foliar applied insecticide for cutworms would cost about \$5 per acre plus application (usually tank mixed with herbicide).

Canola notes:

*Fungicide for white mold would cost about \$18 plus application.

Flax

Field Peas

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	22		36	
Market Price	10.54		6.48	
MARKET REVENUE	231.88		233.28	
DIRECT COSTS				
-Seed	14.80		42.00	
-Herbicides	26.00		35.90	
-Fungicides	0.00		1.50	
-Insecticides	0.00		6.00*	
-Fertilizer	22.29		7.25	
-Crop Insurance	11.50		7.50	
-Fuel & Lubrication	9.51		9.79	
-Repairs	18.02		18.61	
-Drying	0.00		0.00	
-Miscellaneous	1.50		6.00	
-Operating Interest	2.33		3.03	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	105.95		137.58	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.79		8.04	
-Machinery Depreciation	20.78		22.06	
-Machinery Investment	11.87		12.21	
-Land Charge	37.00		37.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	77.44		79.31	
SUM OF ALL LISTED COSTS	183.39		216.89	
RETURN TO LABOR & MANAGEMENT	48.49		16.39	
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.82		3.82	
-Indirect Costs	3.52		2.20	
-Total Costs	8.34		6.02	

Field Pea notes:

*Seed treatment for pea leaf weevil. Foliar insecticide for cutworms and/or pea aphids would cost about \$4 per acre plus application.

Oats

Lentils

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	70	_____	1300	_____
Market Price	2.57	_____	0.18	_____
MARKET REVENUE	179.90	_____	234.00	_____
DIRECT COSTS				
-Seed	12.50	_____	21.00	_____
-Herbicides	10.60	_____	35.50*	_____
-Fungicides	0.00	_____	16.00**	_____
-Insecticides	0.00	_____	0.00***	_____
-Fertilizer	38.16	_____	4.36	_____
-Crop Insurance	12.50	_____	9.50	_____
-Fuel & Lubrication	11.71	_____	11.34	_____
-Repairs	18.83	_____	21.63	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.25	_____	9.50	_____
-Operating Interest	2.53	_____	2.90	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	115.08	_____	131.73	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.67	_____	8.43	_____
-Machinery Depreciation	22.50	_____	25.56	_____
-Machinery Investment	13.13	_____	14.01	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	81.30	_____	85.00	_____
SUM OF ALL LISTED COSTS	196.38	_____	216.73	_____
RETURN TO LABOR & MANAGEMENT	(16.48)	_____	17.27	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	1.64	_____	0.101	_____
-Indirect Costs	1.16	_____	0.065	_____
-Total Costs	2.81	_____	0.167	_____

Lentil notes:

*Includes pre-harvest dessicant.

**Fungicide treatment for ascochyta/anthracnose.

***Foliar insecticide for cutworms, pea aphids and/or grasshoppers would cost about \$4 per acre plus application.

Yellow Mustard

Safflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	800	_____	1050	_____
Market Price	0.27	_____	0.2	_____
MARKET REVENUE	216.00	_____	210.00	_____
DIRECT COSTS				
-Seed	21.00	_____	8.10	_____
-Herbicides	20.20	_____	22.10	_____
-Fungicides	0.00	_____	18.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	16.30	_____	16.16	_____
-Crop Insurance	25.50*	_____	15.00	_____
-Fuel & Lubrication	9.50	_____	8.58	_____
-Repairs	17.95	_____	16.69	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.25	_____	8.25	_____
-Operating Interest	2.67	_____	2.54	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	121.37	_____	115.42	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.84	_____	7.39	_____
-Machinery Depreciation	20.10	_____	18.25	_____
-Machinery Investment	12.30	_____	10.35	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	77.24	_____	72.99	_____
SUM OF ALL LISTED COSTS	198.61	_____	188.41	_____
RETURN TO LABOR & MANAGEMENT	17.39	_____	21.59	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.152	_____	0.110	_____
-Indirect Costs	0.097	_____	0.070	_____
-Total Costs	0.248	_____	0.179	_____

Yellow Mustard notes:

*Crop insurance is not available in some counties of the region.

Safflower notes:

*Fungicide for alternaria leaf spot.

Buckwheat

Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	850		1400	
Market Price	0.229		0.14	
MARKET REVENUE	194.65		196.00	
DIRECT COSTS				
-Seed	20.00		11.25	
-Herbicides	18.00		9.60	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	8.55		13.37	
-Crop Insurance	7.50*		0.00	
-Fuel & Lubrication	9.18		9.86	
-Repairs	17.22		17.62	
-Drying	0.00		0.00	
-Miscellaneous	1.50		8.25	
-Operating Interest	1.84		1.57	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	83.79		71.52	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.66		7.88	
-Machinery Depreciation	19.50		20.23	
-Machinery Investment	11.54		11.94	
-Land Charge	37.00		37.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	75.70		77.05	
SUM OF ALL LISTED COSTS	159.49		148.57	
RETURN TO LABOR & MANAGEMENT	35.16		47.43	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.099		0.051	
-Indirect Costs	0.089		0.055	
-Total Costs	0.188		0.106	

Buckwheat notes:

*Crop insurance is not available in most counties of the region.

Large Chickpea Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1400	_____	43*	_____
Market Price	0.2	_____	4.77	_____
MARKET REVENUE	280.00	_____	205.11	_____
DIRECT COSTS				
-Seed	56.00	_____	9.00	_____
-Herbicides	36.30	_____	23.00	_____
-Fungicides	36.00*	_____	9.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	12.26	_____	46.68	_____
-Crop Insurance	9.50	_____	5.00	_____
-Fuel & Lubrication	11.73	_____	9.17	_____
-Repairs	22.53	_____	16.49	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.50	_____	8.25	_____
-Operating Interest	4.34	_____	2.85	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	197.16	_____	129.44	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.62	_____	7.50	_____
-Machinery Depreciation	26.33	_____	18.46	_____
-Machinery Investment	14.57	_____	10.17	_____
-Land Charge	37.00	_____	37.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	86.52	_____	73.13	_____
SUM OF ALL LISTED COSTS	283.68	_____	202.57	_____
RETURN TO LABOR & MANAGEMENT	(3.68)	_____	2.54	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.141	_____	3.01	_____
-Indirect Costs	0.062	_____	1.70	_____
-Total Costs	0.203	_____	4.71	_____

Large Chickpea notes:

*Two fungicide treatments for ascochyta blight. Additional treatments may be necessary.

Winter Wheat notes:

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

Rye

	Per Acre	Your Figures
Market Yield	41	_____
Market Price	3.85	_____
MARKET REVENUE	157.85	_____
DIRECT COSTS		
-Seed	9.60	_____
-Herbicides	6.50	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	43.80	_____
-Crop Insurance	11.00	_____
-Fuel & Lubrication	8.91	_____
-Repairs	15.56	_____
-Drying	0.00	_____
-Miscellaneous	8.25	_____
-Operating Interest	2.33	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	105.95	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	7.40	_____
-Machinery Depreciation	17.91	_____
-Machinery Investment	9.90	_____
-Land Charge	37.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	72.21	_____
SUM OF ALL LISTED COSTS	178.16	_____
RETURN TO LABOR & MANAGEMENT	(20.31)	_____
LISTED COSTS PER BUDGET UNIT		
	(bu):	
-Direct Costs	2.58	_____
-Indirect Costs	1.76	_____
-Total Costs	4.35	_____

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