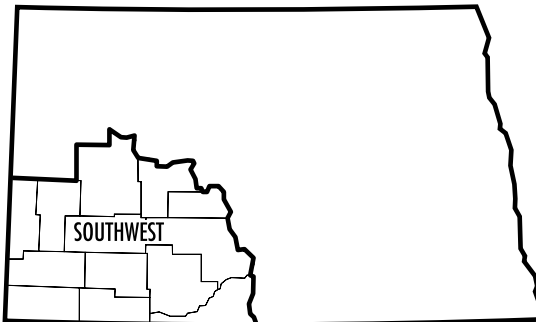




FARM MANAGEMENT PLANNING GUIDE

February 2023

Projected 2023 Crop Budgets



South West North Dakota

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

The 2023 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 2023 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 2015-2021, 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	- .71/lb
Phosphorus	- .61/lb
Potassium	- .65/lb

Seed Prices:

Spring Wheat	16.00/bu
Durum	18.00/bu
Barley	15.50/bu
Corn GM	2.96/thou.kern.
Soybean GM	.34/thou.kern.
Oil Sunflower	1.71/thou.kern.
Conf. Sunflower	3.02/thou.kern.
Canola	14.80/lb
Flax	30.00/bu
Field Peas	20.00/bu
Oats	10.00/bu
Lentils	.30/lb
Mustard	.98/lb
Safflower	.47/lb
Buckwheat	.50/lb
Millet	.60/lb
Large Chickpeas	.60/lb
Winter Wheat	13.50/bu
Rye	11.00/bu

Fuel prices:

Diesel	3.90/gal
Gas	3.45/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 7.5% 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, \$5.00 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	36	_____	35	_____
Market Price	7.90	_____	8.94*	_____
MARKET REVENUE	284.40	_____	312.90	_____
DIRECT COSTS				
-Seed	24.00	_____	31.50	_____
-Herbicides	36.00	_____	36.00	_____
-Fungicides**	6.50	_____	6.50	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	71.71	_____	69.19	_____
-Crop Insurance	5.50	_____	7.00	_____
-Fuel & Lubrication	17.22	_____	17.13	_____
-Repairs	17.14	_____	17.11	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.75	_____	8.75	_____
-Operating Interest	7.01	_____	7.24	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	193.83	_____	200.42	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.73	_____	8.71	_____
-Machinery Depreciation	20.35	_____	20.30	_____
-Machinery Investment	9.93	_____	9.90	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	77.01	_____	76.91	_____
SUM OF ALL LISTED COSTS	270.84	_____	277.33	_____
RETURN TO LABOR & MANAGEMENT	13.56	_____	35.57	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	5.38	_____	5.73	_____
-Indirect Costs	2.14	_____	2.20	_____
-Total Costs	7.52	_____	7.92	_____

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	58	_____	77	_____
Market Price	6.58*	_____	5.25	_____
MARKET REVENUE	329	_____	404.25	_____
DIRECT COSTS				
-Seed	20.93	_____	68.08*	_____
-Herbicides	29.40	_____	36.40	_____
-Fungicides	6.50**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	58.26	_____	78.10	_____
-Crop Insurance	5.50	_____	11.00**	_____
-Fuel & Lubrication	18.42	_____	23.29	_____
-Repairs	17.54	_____	20.82	_____
-Drying	0.00	_____	15.40	_____
-Miscellaneous	8.75	_____	8.75	_____
-Operating Interest	6.20	_____	9.82	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	171.50	_____	271.66	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.00	_____	10.98	_____
-Machinery Depreciation	21.17	_____	31.97	_____
-Machinery Investment	10.30	_____	15.47	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	78.47	_____	96.42	_____
SUM OF ALL LISTED COSTS	249.97	_____	368.08	_____
RETURN TO LABOR & MANAGEMENT	79.03	_____	36.17	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.43	_____	3.53	_____
-Indirect Costs	1.57	_____	1.25	_____
-Total Costs	5.00	_____	4.78	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$4.50 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	28	_____	1580	_____
Market Price	12.10	_____	0.247	_____
MARKET REVENUE	338.80	_____	390.26	_____
DIRECT COSTS				
-Seed	62.40*	_____	35.91	_____
-Herbicides	32.80	_____	44.90	_____
-Fungicides	0.00	_____	0.00*	_____
-Insecticides	0.00	_____	5.00**	_____
-Fertilizer	3.20	_____	61.18	_____
-Crop Insurance	6.50**	_____	7.50	_____
-Fuel & Lubrication	17.43	_____	19.07	_____
-Repairs	17.62	_____	18.55	_____
-Drying	0.00	_____	4.59	_____
-Miscellaneous	5.25	_____	17.75	_____
-Operating Interest	5.45	_____	8.04	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	150.65	_____	222.49	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.91	_____	9.51	_____
-Machinery Depreciation	21.76	_____	23.76	_____
-Machinery Investment	10.70	_____	11.82	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	79.37	_____	83.09	_____
SUM OF ALL LISTED COSTS	230.02	_____	305.58	_____
RETURN TO LABOR & MANAGEMENT	108.78	_____	84.68	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	5.38	_____	0.141	_____
-Indirect Costs	2.83	_____	0.053	_____
-Total Costs	8.22	_____	0.193	_____

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	1530	_____	1660	_____
Market Price	0.346	_____	0.26	_____
MARKET REVENUE	529.38	_____	431.60	_____
DIRECT COSTS				
-Seed	54.36	_____	74.00	_____
-Herbicides	48.10	_____	28.00	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	10.00**	_____	0.00	_____
-Fertilizer	58.64	_____	107.31	_____
-Crop Insurance	17.00	_____	11.50	_____
-Fuel & Lubrication	18.94	_____	18.72	_____
-Repairs	18.50	_____	18.54	_____
-Drying	4.02	_____	0.00	_____
-Miscellaneous	26.75	_____	8.75	_____
-Operating Interest	9.61	_____	10.01	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	265.92	_____	276.83	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.48	_____	9.03	_____
-Machinery Depreciation	23.67	_____	22.85	_____
-Machinery Investment	11.78	_____	10.99	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	82.93	_____	80.87	_____
SUM OF ALL LISTED COSTS	348.85	_____	357.70	_____
RETURN TO LABOR & MANAGEMENT	180.53	_____	73.90	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.174	_____	0.167	_____
-Indirect Costs	0.054	_____	0.049	_____
-Total Costs	0.228	_____	0.215	_____

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	18	_____	33	_____
Market Price	13.79	_____	9.00	_____
MARKET REVENUE	248.22	_____	297.00	_____
DIRECT COSTS				
-Seed	24.00	_____	60.00	_____
-Herbicides	36.30	_____	47.60	_____
-Fungicides	0.00	_____	3.00	_____
-Insecticides	0.00	_____	6.00*	_____
-Fertilizer	34.79	_____	9.07	_____
-Crop Insurance	11.50	_____	7.50	_____
-Fuel & Lubrication	17.93	_____	18.52	_____
-Repairs	18.91	_____	19.51	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	6.25	_____
-Operating Interest	5.44	_____	6.65	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	150.62	_____	184.10	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.00	_____	9.26	_____
-Machinery Depreciation	22.65	_____	23.99	_____
-Machinery Investment	11.31	_____	11.62	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	80.96	_____	82.87	_____
SUM OF ALL LISTED COSTS	231.58	_____	266.97	_____
RETURN TO LABOR & MANAGEMENT	16.64	_____	30.03	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	8.37	_____	5.58	_____
-Indirect Costs	4.50	_____	2.51	_____
-Total Costs	12.87	_____	8.09	_____

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	62	_____	1300	_____
Market Price	2.96	_____	0.23	_____
MARKET REVENUE	183.52	_____	299.00	_____
DIRECT COSTS				
-Seed	20.00	_____	21.00	_____
-Herbicides	12.90	_____	47.10*	_____
-Fungicides	0.00	_____	16.00**	_____
-Insecticides	0.00	_____	0.00***	_____
-Fertilizer	63.42	_____	6.05	_____
-Crop Insurance	12.50	_____	9.50	_____
-Fuel & Lubrication	21.77	_____	21.74	_____
-Repairs	19.31	_____	22.79	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.75	_____	9.75	_____
-Operating Interest	5.95	_____	5.77	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	164.60	_____	159.70	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.66	_____	9.74	_____
-Machinery Depreciation	23.28	_____	27.83	_____
-Machinery Investment	11.88	_____	13.38	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	82.82	_____	88.95	_____
SUM OF ALL LISTED COSTS	247.42	_____	248.65	_____
RETURN TO LABOR & MANAGEMENT	(63.90)	_____	50.35	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	2.65	_____	0.123	_____
-Indirect Costs	1.34	_____	0.068	_____
-Total Costs	3.99	_____	0.191	_____

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	750	_____	1050	_____
Market Price	0.55	_____	0.37	_____
MARKET REVENUE	412.50	_____	388.50	_____
DIRECT COSTS				
-Seed	11.27	_____	11.75	_____
-Herbicides	29.60	_____	23.00	_____
-Fungicides	0.00	_____	18.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	32.10	_____	35.43	_____
-Crop Insurance	25.50*	_____	15.00	_____
-Fuel & Lubrication	18.11	_____	16.36	_____
-Repairs	18.70	_____	17.61	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.75	_____	8.75	_____
-Operating Interest	5.40	_____	5.47	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	149.43	_____	151.37	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.96	_____	8.66	_____
-Machinery Depreciation	21.11	_____	20.24	_____
-Machinery Investment	11.31	_____	9.99	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	79.38	_____	76.89	_____
SUM OF ALL LISTED COSTS	228.81	_____	228.26	_____
RETURN TO LABOR & MANAGEMENT	183.69	_____	160.24	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.199	_____	0.144	_____
-Indirect Costs	0.106	_____	0.073	_____
-Total Costs	0.305	_____	0.217	_____

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	0.369		0.19	
MARKET REVENUE	313.65		266.00	
DIRECT COSTS				
-Seed	25.00		15.00	
-Herbicides	21.80		11.70	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	22.02		30.83	
-Crop Insurance	7.50*		0.00	
-Fuel & Lubrication	17.53		18.85	
-Repairs	17.93		18.33	
-Drying	0.00		0.00	
-Miscellaneous	1.75		8.75	
-Operating Interest	4.26		3.88	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	117.79		107.34	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.78		9.00	
-Machinery Depreciation	20.51		21.30	
-Machinery Investment	10.60		10.98	
-Land Charge	38.00		38.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	77.89		79.28	
SUM OF ALL LISTED COSTS	195.68		186.62	
RETURN TO LABOR & MANAGEMENT	117.97		79.38	
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.139		0.077	
-Indirect Costs	0.092		0.057	
-Total Costs	0.230		0.133	

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	_____	40*	_____
Market Price	0.30	_____	6.88	_____
MARKET REVENUE	420.00	_____	275.20	_____
DIRECT COSTS				
-Seed	84.00	_____	13.50	_____
-Herbicides	56.20	_____	31.70	_____
-Fungicides	36.00*	_____	10.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	22.04	_____	81.81	_____
-Crop Insurance	9.50	_____	5.50	_____
-Fuel & Lubrication	22.49	_____	17.26	_____
-Repairs	23.74	_____	17.28	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.75	_____	8.75	_____
-Operating Interest	9.85	_____	6.97	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	272.57	_____	192.77	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.94	_____	8.71	_____
-Machinery Depreciation	28.65	_____	20.32	_____
-Machinery Investment	13.90	_____	9.74	_____
-Land Charge	38.00	_____	38.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	90.49	_____	76.77	_____
SUM OF ALL LISTED COSTS	363.06	_____	269.54	_____
RETURN TO LABOR & MANAGEMENT	56.94	_____	5.66	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.195	_____	4.82	_____
-Indirect Costs	0.065	_____	1.92	_____
-Total Costs	0.259	_____	6.74	_____

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	6.58	_____
MARKET REVENUE	269.78	_____
DIRECT COSTS		
-Seed	13.20	_____
-Herbicides	10.00	_____
-Fungicides	0.00	_____
-Insecticides	0.00	_____
-Fertilizer	84.34	_____
-Crop Insurance	11.00	_____
-Fuel & Lubrication	17.00	_____
-Repairs	16.38	_____
-Drying	0.00	_____
-Miscellaneous	8.75	_____
-Operating Interest	6.02	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	166.69	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	8.66	_____
-Machinery Depreciation	19.90	_____
-Machinery Investment	9.56	_____
-Land Charge	38.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	76.12	_____
SUM OF ALL LISTED COSTS	242.81	_____
RETURN TO LABOR & MANAGEMENT	26.97	_____
LISTED COSTS PER BUDGET UNIT	(bu):	
-Direct Costs	4.07	_____
-Indirect Costs	1.86	_____
-Total Costs	5.92	_____

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