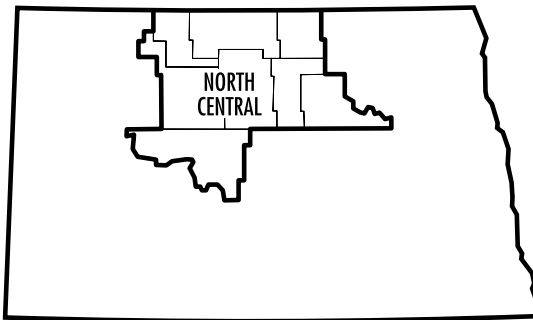




FARM MANAGEMENT PLANNING GUIDE

February 2023

Projected 2023 Crop Budgets



North Central North Dakota

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This region consists of eight counties: Benson, Bottineau, McHenry, McLean, Pierce, Renville, Rolette and Ward.

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.
Dry Beans	.75/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
Buckwheat	.50/lb
Millet	.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	50	_____	49	_____
Market Price	7.93	_____	8.94*	_____
MARKET REVENUE	396.50	_____	438.06	_____
DIRECT COSTS				
-Seed	27.20	_____	36.00	_____
-Herbicides	36.60	_____	36.60	_____
-Fungicides**	10.50	_____	18.50	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	110.03	_____	107.41	_____
-Crop Insurance	7.50	_____	9.50	_____
-Fuel & Lubrication	22.81	_____	22.72	_____
-Repairs	21.19	_____	21.16	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	8.91	_____	9.51	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	246.49	_____	263.15	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.88	_____	9.86	_____
-Machinery Depreciation	24.53	_____	24.47	_____
-Machinery Investment	12.90	_____	12.88	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	100.31	_____	100.21	_____
SUM OF ALL LISTED COSTS	346.80	_____	363.36	_____
RETURN TO LABOR & MANAGEMENT	49.70	_____	74.70	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.93	_____	5.37	_____
-Indirect Costs	2.01	_____	2.05	_____
-Total Costs	6.94	_____	7.42	_____

Wheat notes:

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

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide. Prothioconazole, metconazole or pydiflumetofen containing products are highly recommended when conditions are favorable for fusarium head blight (scab).

***Cereal grain aphid insecticide would cost about \$4. Wheat midge insecticide would cost about \$6.

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	74	_____	106	_____
Market Price	6.44*	_____	5.25	_____
MARKET REVENUE	476.56	_____	556.50	_____
DIRECT COSTS				
-Seed	24.80	_____	85.84*	_____
-Herbicides	29.40	_____	44.80	_____
-Fungicides	18.50**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	98.94	_____	119.72	_____
-Crop Insurance	5.50	_____	11.00	_____
-Fuel & Lubrication	24.74	_____	33.23	_____
-Repairs	21.70	_____	26.48	_____
-Drying	0.00	_____	21.20	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	8.45	_____	12.90	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	233.78	_____	356.92	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.31	_____	12.63	_____
-Machinery Depreciation	25.78	_____	39.39	_____
-Machinery Investment	13.44	_____	19.53	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	102.53	_____	124.55	_____
SUM OF ALL LISTED COSTS	336.31	_____	481.47	_____
RETURN TO LABOR & MANAGEMENT	140.25	_____	75.03	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.16	_____	3.37	_____
-Indirect Costs	1.39	_____	1.18	_____
-Total Costs	4.54	_____	4.54	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$4.50 for feed barley.

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

Corn notes:

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

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	30	_____	1490	_____
Market Price	12.1	_____	0.36	_____
MARKET REVENUE	363	_____	536.40	_____
DIRECT COSTS				
-Seed	65.80*	_____	61.88	_____
-Herbicides	46.00	_____	46.90*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	0.00**	_____	0.00	_____
-Fertilizer	9.84	_____	35.38	_____
-Crop Insurance	5.50	_____	13.50	_____
-Fuel & Lubrication	17.60	_____	25.04	_____
-Repairs	17.68	_____	23.23	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.25	_____	14.25	_____
-Operating Interest	6.29	_____	9.01	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	173.96	_____	249.19	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.94	_____	10.26	_____
-Machinery Depreciation	21.88	_____	28.99	_____
-Machinery Investment	10.75	_____	14.83	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	94.57	_____	107.08	_____
SUM OF ALL LISTED COSTS	268.53	_____	356.27	_____
RETURN TO LABOR & MANAGEMENT	94.47	_____	180.13	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	5.80	_____	0.167	_____
-Indirect Costs	3.15	_____	0.072	_____
-Total Costs	8.95	_____	0.239	_____

Soybean notes:

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

**Insecticide for soybean aphid, spider mite, or foliage-feeding caterpillars would cost about \$4 per acre plus application.

Drybean notes:

*Includes dessicant prior to straight cutting.

**Fungicide for white mold. Fungicide for rust at \$4-\$12 plus application maybe necessary.

Oil Sunflower

Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1710	_____	1380	_____
Market Price	0.249	_____	0.349	_____
MARKET REVENUE	425.79	_____	481.62	_____
DIRECT COSTS				
-Seed	35.91	_____	54.36	_____
-Herbicides	44.90	_____	48.10	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	5.00**	_____	10.00**	_____
-Fertilizer	69.32	_____	51.83	_____
-Crop Insurance	9.00	_____	14.00	_____
-Fuel & Lubrication	24.12	_____	23.22	_____
-Repairs	21.05	_____	20.74	_____
-Drying	5.01	_____	3.90	_____
-Miscellaneous	10.75	_____	19.75	_____
-Operating Interest	8.44	_____	9.22	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	233.50	_____	255.12	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.39	_____	10.19	_____
-Machinery Depreciation	26.68	_____	26.06	_____
-Machinery Investment	14.32	_____	14.05	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	104.39	_____	103.30	_____
SUM OF ALL LISTED COSTS	337.89	_____	358.42	_____
RETURN TO LABOR & MANAGEMENT	87.90	_____	123.20	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.137	_____	0.185	_____
-Indirect Costs	0.061	_____	0.075	_____
-Total Costs	0.198	_____	0.260	_____

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 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

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1750	_____	20	_____
Market Price	0.266	_____	13.93	_____
MARKET REVENUE	465.5	_____	278.60	_____
DIRECT COSTS				
-Seed	74.00	_____	27.00	_____
-Herbicides	28.00	_____	41.20	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	117.21	_____	40.89	_____
-Crop Insurance	8.00	_____	11.00	_____
-Fuel & Lubrication	21.58	_____	21.66	_____
-Repairs	20.26	_____	21.22	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	10.15	_____	6.18	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	280.95	_____	170.90	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.47	_____	9.58	_____
-Machinery Depreciation	24.58	_____	25.00	_____
-Machinery Investment	12.24	_____	12.95	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	99.29	_____	100.53	_____
SUM OF ALL LISTED COSTS	380.24	_____	271.43	_____
RETURN TO LABOR & MANAGEMENT	85.26	_____	7.17	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.161	_____	8.55	_____
-Indirect Costs	0.057	_____	5.03	_____
-Total Costs	0.217	_____	13.57	_____

Canola notes:

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

Field Peas

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	37	_____	87	_____
Market Price	9.00	_____	2.99	_____
MARKET REVENUE	333.00	_____	260.13	_____
DIRECT COSTS				
-Seed	60.00	_____	20.00	_____
-Herbicides	47.60	_____	12.90	_____
-Fungicides	3.00	_____	0.00	_____
-Insecticides	0.00*	_____	0.00	_____
-Fertilizer	14.05	_____	100.04	_____
-Crop Insurance	8.50	_____	13.50	_____
-Fuel & Lubrication	20.74	_____	27.53	_____
-Repairs	20.37	_____	22.59	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	9.75	_____	1.75	_____
-Operating Interest	6.90	_____	7.44	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	190.91	_____	205.75	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.52	_____	10.82	_____
-Machinery Depreciation	25.16	_____	27.20	_____
-Machinery Investment	12.24	_____	14.55	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	99.92	_____	105.57	_____
SUM OF ALL LISTED COSTS	290.83	_____	311.32	_____
RETURN TO LABOR & MANAGEMENT	42.17	_____	(51.19)	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	5.16	_____	2.36	_____
-Indirect Costs	2.70	_____	1.21	_____
-Total Costs	7.86	_____	3.58	_____

Field Pea notes:

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

Lentils

Yellow Mustard

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1500	_____	850	_____
Market Price	0.23	_____	0.550	_____
MARKET REVENUE	345.00	_____	467.50	_____
DIRECT COSTS				
-Seed	21.00	_____	13.72	_____
-Herbicides	47.10*	_____	29.60	_____
-Fungicides	16.00**	_____	0.00	_____
-Insecticides	0.00***	_____	6.00*	_____
-Fertilizer	9.49	_____	39.66	_____
-Crop Insurance	9.00	_____	16.50**	_____
-Fuel & Lubrication	22.75	_____	21.35	_____
-Repairs	23.42	_____	20.51	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	9.75	_____	1.75	_____
-Operating Interest	5.94	_____	5.59	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	164.45	_____	154.68	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.08	_____	9.43	_____
-Machinery Depreciation	28.67	_____	23.02	_____
-Machinery Investment	13.85	_____	12.66	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	105.60	_____	98.11	_____
SUM OF ALL LISTED COSTS	270.05	_____	252.79	_____
RETURN TO LABOR & MANAGEMENT	74.95	_____	214.71	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.110	_____	0.182	_____
-Indirect Costs	0.070	_____	0.115	_____
-Total Costs	0.180	_____	0.297	_____

Lentil notes:

*Includes pre-harvest desiccant.

**Fungicide treatment for ascochyta/anthracnose.

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

Yellow Mustard notes:

*Insecticide seed treatment for flea beetles.

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

Buckwheat

Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950	_____	1300	_____
Market Price	0.363	_____	0.19	_____
MARKET REVENUE	344.85	_____	247.00	_____
DIRECT COSTS				
-Seed	25.00	_____	15.00	_____
-Herbicides	21.80	_____	11.70	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	27.24	_____	27.31	_____
-Crop Insurance	8.00*	_____	0.00	_____
-Fuel & Lubrication	20.97	_____	22.28	_____
-Repairs	19.80	_____	20.82	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	4.67	_____	3.71	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	129.23	_____	102.57	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.27	_____	9.64	_____
-Machinery Depreciation	22.52	_____	23.65	_____
-Machinery Investment	12.01	_____	12.95	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	96.80	_____	99.24	_____
SUM OF ALL LISTED COSTS	226.03	_____	201.81	_____
RETURN TO LABOR & MANAGEMENT	118.82	_____	45.19	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.136	_____	0.079	_____
-Indirect Costs	0.102	_____	0.076	_____
-Total Costs	0.238	_____	0.155	_____

Buckwheat notes:

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

Winter Wheat

Rye

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	55*	_____	46	_____
Market Price	6.89	_____	6.73	_____
MARKET REVENUE	378.95	_____	309.58	_____
DIRECT COSTS				
-Seed	14.85	_____	13.20	_____
-Herbicides	34.00	_____	10.00	_____
-Fungicides	10.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	123.17	_____	99.53	_____
-Crop Insurance	7.50	_____	16.00	_____
-Fuel & Lubrication	21.52	_____	20.85	_____
-Repairs	19.01	_____	18.45	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.75	_____	8.75	_____
-Operating Interest	8.96	_____	7.00	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	247.76	_____	193.78	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.31	_____	9.19	_____
-Machinery Depreciation	22.51	_____	22.03	_____
-Machinery Investment	11.07	_____	10.97	_____
-Land Charge	53.00	_____	53.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	95.89	_____	95.19	_____
SUM OF ALL LISTED COSTS	343.65	_____	288.97	_____
RETURN TO LABOR & MANAGEMENT	35.30	_____	20.61	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.50	_____	4.21	_____
-Indirect Costs	1.74	_____	2.07	_____
-Total Costs	6.25	_____	6.28	_____

Winter Wheat notes:

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

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