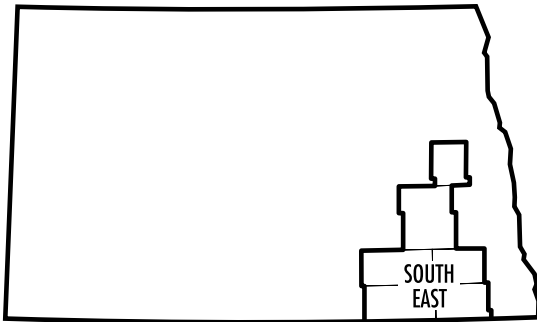




FARM MANAGEMENT PLANNING GUIDE

February 2023

Projected 2023 Crop Budgets



South East North Dakota

Ron Haugen, Farm Management Specialist

Note: This region consists of six counties:
Barnes, Dickey, LaMoure, Ransom, Sargent and Steele.

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.

NDSU

EXTENSION

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 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
Buckwheat	.50/lb
Millet	.60/lb
Winter Wheat	13.50/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	58	_____	49	_____
Market Price	8.15	_____	9.11*	_____
MARKET REVENUE	472.70	_____	446.39	_____
DIRECT COSTS				
-Seed	28.00	_____	36.00	_____
-Herbicides	28.60	_____	28.60	_____
-Fungicides**	18.50	_____	18.50	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	126.54	_____	103.82	_____
-Crop Insurance	5.50	_____	7.00	_____
-Fuel & Lubrication	25.44	_____	24.67	_____
-Repairs	21.65	_____	21.39	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	9.60	_____	9.06	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	265.58	_____	250.79	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.04	_____	9.87	_____
-Machinery Depreciation	25.32	_____	24.80	_____
-Machinery Investment	13.13	_____	12.90	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	148.49	_____	147.57	_____
SUM OF ALL LISTED COSTS	414.07	_____	398.36	_____
RETURN TO LABOR & MANAGEMENT	58.63	_____	48.03	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.58	_____	5.12	_____
-Indirect Costs	2.56	_____	3.01	_____
-Total Costs	7.14	_____	8.13	_____

Wheat notes:

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

**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.

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	73	_____	163	_____
Market Price	6.48*	_____	5.25	_____
MARKET REVENUE	473.04	_____	855.75	_____
DIRECT COSTS				
-Seed	31.00	_____	100.50*	_____
-Herbicides	23.90	_____	51.00	_____
-Fungicides	18.50**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	93.17	_____	186.03	_____
-Crop Insurance	5.00	_____	12.00	_____
-Fuel & Lubrication	26.54	_____	37.96	_____
-Repairs	21.81	_____	30.02	_____
-Drying	0.00	_____	32.60	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	8.31	_____	16.94	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	229.98	_____	468.80	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.40	_____	13.75	_____
-Machinery Depreciation	26.53	_____	42.13	_____
-Machinery Investment	13.72	_____	21.19	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	150.65	_____	177.07	_____
SUM OF ALL LISTED COSTS	380.63	_____	645.87	_____
RETURN TO LABOR & MANAGEMENT	92.41	_____	209.88	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	3.15	_____	2.88	_____
-Indirect Costs	2.06	_____	1.09	_____
-Total Costs	5.21	_____	3.96	_____

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 which is recommended when conditions are favorable for fusarium head blight (scab).

Corn notes:

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

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	40	_____	1940	_____
Market Price	12.33	_____	0.36	_____
MARKET REVENUE	493.20	_____	698.40	_____
DIRECT COSTS				
-Seed	65.80*	_____	61.88	_____
-Herbicides	65.80	_____	46.90*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	4.57	_____	68.96	_____
-Crop Insurance	5.50	_____	12.50	_____
-Fuel & Lubrication	20.15	_____	27.97	_____
-Repairs	19.67	_____	25.50	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	5.25	_____	14.25	_____
-Operating Interest	7.15	_____	10.42	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	197.89	_____	288.38	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.70	_____	10.78	_____
-Machinery Depreciation	24.09	_____	30.88	_____
-Machinery Investment	12.69	_____	16.12	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	146.48	_____	157.78	_____
SUM OF ALL LISTED COSTS	344.37	_____	446.16	_____
RETURN TO LABOR & MANAGEMENT	148.83	_____	252.24	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(lb):	
-Direct Costs	4.95	_____	0.149	_____
-Indirect Costs	3.66	_____	0.081	_____
-Total Costs	8.61	_____	0.230	_____

Soybean notes:

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

**Insecticide for soybean aphid, spider mite, or foliage-feeding caterpillars.

Drybean notes:

*Includes desiccant 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

Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1620	_____	1680	_____
Market Price	0.254	_____	0.356	_____
MARKET REVENUE	411.48	_____	598.08	_____
DIRECT COSTS				
-Seed	37.62	_____	57.38	_____
-Herbicides	35.90	_____	39.00	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	5.00**	_____	10.00**	_____
-Fertilizer	62.51	_____	65.56	_____
-Crop Insurance	9.00	_____	17.00	_____
-Fuel & Lubrication	27.23	_____	27.39	_____
-Repairs	22.30	_____	22.35	_____
-Drying	4.92	_____	4.92	_____
-Miscellaneous	10.75	_____	19.75	_____
-Operating Interest	8.07	_____	9.88	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	223.30	_____	273.23	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.95	_____	10.99	_____
-Machinery Depreciation	29.30	_____	29.42	_____
-Machinery Investment	16.06	_____	16.11	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	156.31	_____	156.52	_____
SUM OF ALL LISTED COSTS	379.61	_____	429.75	_____
RETURN TO LABOR & MANAGEMENT	31.87	_____	168.33	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(lb):	
-Direct Costs	0.138	_____	0.163	_____
-Indirect Costs	0.096	_____	0.093	_____
-Total Costs	0.234	_____	0.256	_____

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 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."

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1660	_____	24	_____
Market Price	0.255	_____	14.26	_____
MARKET REVENUE	423.30	_____	342.24	_____
DIRECT COSTS				
-Seed	74.00	_____	30.00	_____
-Herbicides	28.00	_____	34.30	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	106.60	_____	52.07	_____
-Crop Insurance	8.00	_____	12.50	_____
-Fuel & Lubrication	24.21	_____	24.10	_____
-Repairs	21.24	_____	22.19	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	9.89	_____	6.63	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	273.69	_____	183.54	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.70	_____	9.86	_____
-Machinery Depreciation	25.57	_____	26.01	_____
-Machinery Investment	12.97	_____	13.65	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	148.24	_____	149.52	_____
SUM OF ALL LISTED COSTS	421.93	_____	333.06	_____
RETURN TO LABOR & MANAGEMENT	1.37	_____	9.18	_____
LISTED COSTS PER BUDGET UNIT	(lb):		(bu):	
-Direct Costs	0.165	_____	7.65	_____
-Indirect Costs	0.089	_____	6.23	_____
-Total Costs	0.254	_____	13.88	_____

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	_____	76	_____
Market Price	9.00	_____	3.07	_____
MARKET REVENUE	333.00	_____	233.32	_____
DIRECT COSTS				
-Seed	60.00	_____	20.00	_____
-Herbicides	42.50	_____	6.50	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	10.33	_____	81.37	_____
-Crop Insurance	7.00	_____	9.00	_____
-Fuel & Lubrication	25.18	_____	28.47	_____
-Repairs	22.80	_____	22.41	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	9.75	_____	1.75	_____
-Operating Interest	6.66	_____	6.36	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	184.22	_____	175.86	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	10.09	_____	10.60	_____
-Machinery Depreciation	27.39	_____	26.81	_____
-Machinery Investment	13.95	_____	14.23	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	151.43	_____	151.64	_____
SUM OF ALL LISTED COSTS	335.65	_____	327.50	_____
RETURN TO LABOR & MANAGEMENT	(2.65)	_____	(94.18)	_____
LISTED COSTS PER BUDGET UNIT	(bu):		(bu):	
-Direct Costs	4.98	_____	2.31	_____
-Indirect Costs	4.09	_____	2.00	_____
-Total Costs	9.07	_____	4.31	_____

Buckwheat

Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950	_____	1800	_____
Market Price	0.365	_____	0.19	_____
MARKET REVENUE	346.75	_____	342.00	_____
DIRECT COSTS				
-Seed	25.00	_____	15.00	_____
-Herbicides	14.30	_____	4.10	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	26.16	_____	44.40	_____
-Crop Insurance	9.50*	_____	6.00	_____
-Fuel & Lubrication	20.97	_____	25.03	_____
-Repairs	19.63	_____	21.25	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.75	_____	1.75	_____
-Operating Interest	4.40	_____	4.41	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	121.71	_____	121.94	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.09	_____	9.83	_____
-Machinery Depreciation	21.58	_____	24.48	_____
-Machinery Investment	11.46	_____	13.18	_____
-Land Charge	100.00	_____	100.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	142.13	_____	147.49	_____
SUM OF ALL LISTED COSTS	263.84	_____	269.43	_____
RETURN TO LABOR & MANAGEMENT	82.91	_____	72.57	_____
LISTED COSTS PER BUDGET UNIT				
	(lb):		(lb):	
-Direct Costs	0.128	_____	0.068	_____
-Indirect Costs	0.150	_____	0.082	_____
-Total Costs	0.278	_____	0.150	_____

Buckwheat notes:

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

Winter Wheat

	Per Acre	Your Figures
Market Yield	64*	_____
Market Price	7.21	_____
MARKET INCOME	461.44	_____
DIRECT COSTS		
-Seed	16.20	_____
-Herbicides	34.00	_____
-Fungicides	10.00	_____
-Insecticides	0.00	_____
-Fertilizer	141.69	_____
-Crop Insurance	5.50	_____
-Fuel & Lubrication	22.30	_____
-Repairs	19.27	_____
-Drying	0.00	_____
-Miscellaneous	8.75	_____
-Operating Interest	9.66	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	267.37	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	9.49	_____
-Machinery Depreciation	23.03	_____
-Machinery Investment	11.31	_____
-Land Charge	100.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	143.83	_____
SUM OF ALL LISTED COSTS	411.20	_____
RETURN TO LABOR & MANAGEMENT	50.24	_____
LISTED COSTS PER BUDGET UNIT	(bu):	
-Direct Costs	4.18	_____
-Indirect Costs	2.25	_____
-Total Costs	6.43	_____

Winter Wheat notes:

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

NDSU Extension does not endorse commercial products or companies even though reference may be made to tradenames, trademarks or service names. NDSU encourages you to use and share this content, but please do so under the conditions of our Creative Commons license. You may copy, distribute, transmit and adapt this work as long as you give full attribution, don't use the work for commercial purposes and share your resulting work similarly. For more information, visit www.ag.ndsu.edu/agcomm/creative-commons.

For more information on this and other topics, see www.ndsu.edu/extension

County commissions, North Dakota State University and U.S. Department of Agriculture cooperating. NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost for Title IX/ADA Coordinator, Old Main 201, NDSU Main Campus, 701-231-7708, ndsu.eoaa@ndsu.edu. This publication will be made available in alternative formats for people with disabilities upon request, 701-231-7881. 240-2-23