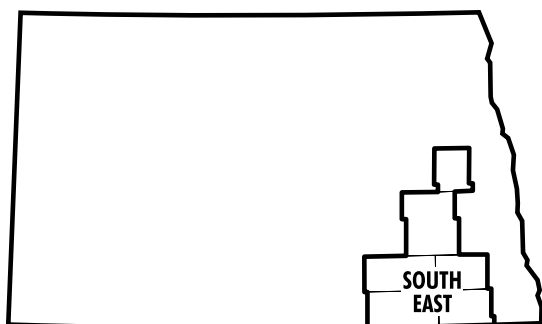




FARM MANAGEMENT PLANNING GUIDE

January 2017

Projected 2017 Crop Budgets



South East North Dakota

Andrew Swenson, Farm Management Specialist
Ron Haugen, Farm Management Specialist

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

The 2017 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 2017 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
SERVICE

North Dakota State University, Fargo, ND

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 2014 Farm Bill initiated 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 2009-2015, 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 of 130% of market yield. N fertilizer can be reduced if previous crop was soybean, dry bean, field peas or lentil.

Soil test - recrop:
 Nitrogen - 34 lb
 Phosphorus - 10 ppm
 Potassium - 248 ppm

Fertilizer prices:
 Nitrogen - .35/lb
 Phosphorus - .37/lb
 Potassium - .25/lb

Seed Prices:

Spring Wheat	8.75/bu
Durum	12.00/bu
Barley	7.75/bu
Corn GM	2.78/thou.kern.
Soybean RR2	.33/thou.kern.
Dry Beans	.68/lb
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.60/thou.kern.
Canola	11.00/lb
Flax	12.50/bu
Field Peas	13.75/bu
Oats	5.50/bu
Buckwheat	.60/lb
Millet	.25/lb
Winter Wheat	7.50/bu

Fuel prices:

Diesel	1.85/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 and dry beans. Yield Protection or APH insurance was used for other crops. A 70% coverage and optional units were used, except corn for which 80% coverage and enterprise units were assumed.

Miscellaneous: soil testing, machinery rent and custom work.

Operating Interest: Direct costs charged 4.75% 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, \$3.50 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

Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	56	_____	46	_____
Market Price	5.10	_____	5.82*	_____
MARKET INCOME	285.60	_____	267.72	_____
DIRECT COSTS				
-Seed	15.31	_____	24.00	_____
-Herbicides	22.00	_____	22.00	_____
-Fungicides*	17.00	_____	17.00	_____
-Insecticides**	0.00	_____	0.00	_____
-Fertilizer	62.60	_____	49.30	_____
-Crop Insurance	7.50	_____	7.80	_____
-Fuel & Lubrication	12.20	_____	11.77	_____
-Repairs	19.73	_____	19.46	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.75	_____	3.63	_____
SUM OF LISTED DIRECT COSTS	161.60	=====	156.45	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.02	_____	7.84	_____
-Machinery Depreciation	22.71	_____	22.22	_____
-Machinery Investment	13.20	_____	12.94	_____
-Land Charge	95.50	_____	95.50	_____
SUM OF LISTED INDIRECT COSTS	139.44	=====	138.50	=====
SUM OF ALL LISTED COSTS	301.04	_____	294.95	_____
RETURN TO LABOR & MANAGEMENT	(15.44)	_____	(27.23)	_____
LISTED COSTS PER BUDGET UNIT				
	(bu)		(bu)	
-Direct Costs	2.89	_____	3.40	_____
-Indirect Costs	2.49	_____	3.01	_____
-Total Costs	5.38	_____	6.41	_____

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 often warranted in this region for fusarium head blight (scab) control.

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

Malting Barley

Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	72	_____	135	_____
Market Price	4.00*	_____	3.30	_____
MARKET INCOME	288.00	_____	445.50	_____
DIRECT COSTS				
-Seed	15.50	_____	93.13*	_____
-Herbicides	19.20	_____	25.00	_____
-Fungicides	17.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	47.11	_____	78.69	_____
-Crop Insurance	12.70	_____	19.10	_____
-Fuel & Lubrication	12.80	_____	17.66	_____
-Repairs	19.93	_____	25.72	_____
-Drying	0.00	_____	24.30	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	3.46	_____	6.77	_____
SUM OF LISTED DIRECT COSTS	149.21	=====	291.87	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.35	_____	10.75	_____
-Machinery Depreciation	23.72	_____	34.78	_____
-Machinery Investment	13.77	_____	19.93	_____
-Land Charge	95.50	_____	95.50	_____
SUM OF LISTED INDIRECT COSTS	141.35	=====	160.96	=====
SUM OF ALL LISTED COSTS	290.56	_____	452.83	_____
RETURN TO LABOR & MANAGEMENT	(2.56)	_____	(7.33)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	2.07	_____	2.16	_____
-Indirect Costs	1.96	_____	1.19	_____
-Total Costs	.04	_____	3.35	_____

Barley notes:

*There is risk of not making malting barley quality. Use \$2.70 price for feed barley quality.

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

Corn notes:

*GM corn with herbicide tolerance and above ground insect control traits. Cost includes insecticide seed treatment for wireworm, rootworm, white grub and suppression of cutworm.

Soybeans

Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	35	_____	1770	_____
Market Price	8.93	_____	0.24	_____
MARKET INCOME	312.55	_____	424.80	_____
DIRECT COSTS				
-Seed	65.75*	_____	56.10	_____
-Herbicides	24.00	_____	45.80*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	2.53	_____	36.04	_____
-Crop Insurance	8.30	_____	13.20	_____
-Fuel & Lubrication	10.31	_____	13.12	_____
-Repairs	18.72	_____	23.47	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	4.75	_____	12.75	_____
-Operating Interest	3.29	_____	5.24	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	141.64	_____	225.71	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.66	_____	8.72	_____
-Machinery Depreciation	22.11	_____	28.36	_____
-Machinery Investment	12.69	_____	16.43	_____
-Land Charge	95.50	_____	95.50	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	137.95	_____	149.01	_____
SUM OF ALL LISTED COSTS	279.59	_____	374.72	_____
RETURN TO LABOR & MANAGEMENT	32.96	_____	50.08	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(lb)	
-Direct Costs	4.05	_____	0.13	_____
-Indirect Costs	3.94	_____	0.08	_____
-Total Costs	7.99	_____	0.21	_____

Soybean notes:

*RR2 (glyphosate) resistant soybeans. The cost includes \$8 for inoculant and fungicide treatment in addition to seed expense.

**Soybean aphid and/or spider mite insecticide.

Drybean notes:

Under the 2014 farm bill government payment reductions can occur if drybean plantings exceed non-base acres plus 15 percent of base acres (35 percent if enrolled in ARC-IC).

*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	1490		1620	
Market Price	0.173		0.224	
MARKET INCOME	257.77		362.88	
DIRECT COSTS				
-Seed	33.00		49.40	
-Herbicides	27.00		29.20	
-Fungicides	0.00*		0.00*	
-Insecticides	6.00**		12.00**	
-Fertilizer	28.09		31.58	
-Crop Insurance	12.40		18.50	
-Fuel & Lubrication	12.95		13.12	
-Repairs	20.11		20.22	
-Drying	4.47		4.86	
-Miscellaneous	9.50		17.50	
-Operating Interest	3.65		4.66	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	157.16		201.05	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.72		8.80	
-Machinery Depreciation	25.83		26.03	
-Machinery Investment	15.86		15.96	
-Land Charge	95.50		95.50	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	145.91		146.30	
SUM OF ALL LISTED COSTS	303.07		347.35	
RETURN TO LABOR & MANAGEMENT	(45.30)		15.53	
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.11		0.12	
-Indirect Costs	0.10		0.09	
-Total Costs	0.20		0.21	

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 \$6 per application. Each custom application cost of \$8 is under "Miscellaneous."

Canola

Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1730	_____	23	_____
Market Price	0.157	_____	8.66	_____
MARKET INCOME	271.61	_____	199.18	_____
DIRECT COSTS				
-Seed	55.00*	_____	12.50	_____
-Herbicides	22.50	_____	21.00	_____
-Fungicides	0.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	56.91	_____	24.36	_____
-Crop Insurance	15.10	_____	6.80	_____
-Fuel & Lubrication	11.53	_____	11.15	_____
-Repairs	18.86	_____	19.21	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	4.31	_____	2.29	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	185.71	_____	98.82	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.81	_____	7.83	_____
-Machinery Depreciation	21.88	_____	21.85	_____
-Machinery Investment	13.27	_____	13.65	_____
-Land Charge	95.50	_____	95.50	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	138.46	_____	138.82	_____
SUM OF ALL LISTED COSTS	324.18	_____	237.64	_____
RETURN TO LABOR & MANAGEMENT	(52.57)	_____	(38.46)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.11	_____	4.30	_____
-Indirect Costs	0.08	_____	6.04	_____
-Total Costs	0.19	_____	10.33	_____

Canola notes:

*Cost includes insecticide seed treatment for flea beetles.

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

Field Peas

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	39		80	
Market Price	6.24		2.25	
MARKET INCOME	243.36		180.00	
DIRECT COSTS				
-Seed	41.25		11.00	
-Herbicides	31.50		5.25	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	6.87		44.42	
-Crop Insurance	10.00		10.00	
-Fuel & Lubrication	12.00		13.57	
-Repairs	20.77		20.17	
-Drying	0.00		0.00	
-Miscellaneous	9.25		1.50	
-Operating Interest	3.13		2.52	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	134.77		108.42	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.06		8.66	
-Machinery Depreciation	24.40		24.21	
-Machinery Investment	13.89		14.52	
-Land Charge	95.50		95.50	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	141.84		142.88	
SUM OF ALL LISTED COSTS	276.61		251.30	
RETURN TO LABOR & MANAGEMENT	(33.25)		(71.30)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.46		1.36	
-Indirect Costs	3.64		1.79	
-Total Costs	7.09		3.14	

Field Pea notes:

Green pea price is expected to be about \$.70 higher than yellow peas.

Buckwheat

Millet

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	950	_____	1800	_____
Market Price	0.194	_____	0.065	_____
MARKET INCOME	184.30	_____	117.00	_____
DIRECT COSTS				
-Seed	30.00	_____	6.25	_____
-Herbicides	11.50	_____	3.25	_____
-Fungicides	0.00	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	12.58	_____	22.05	_____
-Crop Insurance	9.10*	_____	4.50	_____
-Fuel & Lubrication	9.64	_____	11.66	_____
-Repairs	17.47	_____	18.95	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	1.50	_____
-Operating Interest	2.18	_____	1.62	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	93.97	_____	69.77	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.20	_____	7.87	_____
-Machinery Depreciation	19.48	_____	22.02	_____
-Machinery Investment	11.63	_____	13.36	_____
-Land Charge	95.50	_____	95.50	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	133.81	_____	138.75	_____
SUM OF ALL LISTED COSTS	227.78	_____	208.52	_____
RETURN TO LABOR & MANAGEMENT	(43.48)	_____	(91.52)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.10	_____	0.04	_____
-Indirect Costs	0.14	_____	0.08	_____
-Total Costs	0.24	_____	0.12	_____

Buckwheat notes:

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

Winter Wheat

	Per Acre	Your Figures
Market Yield	57*	_____
Market Price	4.38	_____
MARKET INCOME	249.66	_____
DIRECT COSTS		
-Seed	9.00	_____
-Herbicides	23.90	_____
-Fungicides	9.00	_____
-Insecticides	0.00	_____
-Fertilizer	63.93	_____
-Crop Insurance	7.60	_____
-Fuel & Lubrication	10.51	_____
-Repairs	17.60	_____
-Drying	0.00	_____
-Miscellaneous	7.50	_____
-Operating Interest	3.54	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	152.58	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	7.47	_____
-Machinery Depreciation	20.53	_____
-Machinery Investment	11.33	_____
-Land Charge	95.50	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	134.83	_____
SUM OF ALL LISTED COSTS	287.41	_____
RETURN TO LABOR & MANAGEMENT	(37.75)	_____
LISTED COSTS PER BUDGET UNIT	(bu)	
-Direct Costs	2.68	_____
-Indirect Costs	2.37	_____
-Total Costs	5.04	_____

Winter Wheat notes:

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

2017 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 140HP Tractor	130000	400 hr	20	40676	11.17 /hr	9.60 /hr	12.84 /hr	
FWA 180HP Tractor	176200	500 hr	15	50575	16.75 /hr	10.20 /hr	17.40 /hr	
4WD 340HP Tractor	232100	500 hr	15	66661	22.06 /hr	13.44 /hr	13.11 /hr	
SP Combine (base unit)	281900	250 hr	12	68074	71.28 /hr	31.50 /hr	44.43 /hr	
Tandem Truck (used)	38600	150 hr	15	12300	11.69 /hr	7.64 /hr	7.92 /hr	
Semi & Trailer (used)	43300	150 hr	10	12400	20.60 /hr	8.36 /hr	9.57 /hr	
Pick-up Truck	32000	300 hr	10	7400	8.20 /hr	2.96 /hr	3.67 /hr	
Swather 30 ft	30600	1000 ac	20	7253	1.17 /ac	0.85 /ac	0.49 /ac	13.1
Sprayer 90 ft	38800	5000 ac	10	19278	0.39 /ac	0.26 /ac	0.50 /ac	42.5
Chisel Plow 38 ft	43300	3000 ac	15	25280	0.40 /ac	0.51 /ac	0.96 /ac	19.6
Field Cultivator 48 ft	48900	3000 ac	15	28558	0.45 /ac	0.58 /ac	0.86 /ac	24.7
Tandem Disk 28 ft	34300	800 ac	20	9830	1.53 /ac	1.24 /ac	0.87 /ac	13.6
Heavy Harrow 70 ft	31000	2000 ac	20	18080	0.32 /ac	0.55 /ac	0.35 /ac	39.7
Air Seeder 40 ft	180800	2400 ac	10	92386	3.68 /ac	2.56 /ac	6.25 /ac	17.0
Planter 24-22	135300	1600 ac	15	56265	3.29 /ac	2.69 /ac	5.10 /ac	15.6
Corn head 12R w/chopper	117300	1000 ac	15	22458	6.32 /ac	3.14 /ac	2.47 /ac	7.5
Grain str. cut 30 ft	26000	1000 ac	15	5290	1.38 /ac	0.70 /ac	0.40 /ac	10.2
Head w/sunf pans 30 ft	31300	600 ac	20	3200	2.34 /ac	1.29 /ac	0.48 /ac	10.2
Flex head 30 ft	38600	1000 ac	20	3541	1.75 /ac	0.95 /ac	0.60 /ac	10.2
Rock picker	22300	50 hr	20	7122	0.51 /ac	0.44 /ac	0.33 /ac	29.1
Grain Cart	30500	100 hr	20	5200	12.65 /hr	8.03 /hr	7.60 /hr	
Grain auger	13000	50 hr	20	750	12.25 /hr	6.19 /hr	4.80 /hr	

The NDSU Extension Service 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.ag.ndsu.edu

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. 250-1-17