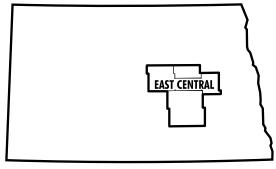


December 2015

## Projected 2016 Crop Budgets



# **East Central North Dakota**

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Note: This region consists of five counties: Eddy, Foster, Griggs, Stutsman and Wells.

The 2016 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 cost items with your per acre interest and rental expense of machinery and land, and real estate tax if land is owned.

replacing the machinery investment and land charge

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 2016 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 2014 Farm Bill initiated the Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC) support programs, and elimanted the direct and countercyclical payment programs and the ACRE program. **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 2008-2014, 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 - 8 ppm

Potassium - 280 ppm

#### Fertilizer prices:

Nitrogen - .40/lb Phosphorus - .44/lb Potassium - .33/lb

#### **Seed Prices:**

Spring Wheat 9.25/bu
Durum 12.50/bu
Barley 8.50/bu
Corn GM 2.70/thou.kern.
Soybean RR2
Dry Beans .67/lb

Oil Sunflower 1.50/thou.kern. Conf. Sunflower 2.50/thou.kern.

Canola 10.25/lb Flax 14.50/bu Field Peas 14.00/bu Oats 6.00/bu Mustard 2.00/lb Buckwheat .60/lb .25/lb Millet Winter Wheat 8.00/bu 8.00/bu Rye

#### **Fuel prices:**

Diesel 1.80/gal Gas 1.95/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 75% coverage and enterprise units were assumed.

**Miscellaneous:** soil testing, machinery rent and custom work.

**Operating Interest:** Direct costs charged 4.25% 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 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	50		41	
Market Price	5.35		6.04*	
MARKET INCOME	267.50		247.64	
DIRECT COSTS				
-Seed	16.19		21.88	
-Herbicides	22.00		22.00	
-Fungicides**	17.00		17.00	
-Insecticides***	0.00		0.00	
-Fertilizer	66.70		52.25	
-Crop Insurance	12.00		13.00	
-Fuel & Lubrication	11.57		11.19	
-Repairs	19.53		19.28	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.54		3.36	
	======	========	=======	========
SUM OF LISTED DIRECT COSTS	170.02		161.45	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.59		7.43	
-Machinery Depreciation	22.39		21.94	
-Machinery Investment	12.99		12.76	
-Land Investment	70.00		70.00	
OURA OF LIGHTED INDIDEOT COOTS	=======	========	=======	========
SUM OF LISTED INDIRECT COSTS	112.97		112.13	
SUM OF ALL LISTED COSTS	282.99		273.59	
RETURN TO LABOR & MANAGEMENT	(15.49)		(25.95)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.40		3.94	
-Indirect Costs	2.26		2.73	-
-Total Costs	5.66		6.67	-
	0.00		0.07	

#### Wheat notes:

<sup>\*</sup>Durum price is for milling quality. There is high risk of lower quality and lower price.

<sup>\*\*</sup>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.

<sup>\*\*\*</sup>Cereal grain aphid insecticide would cost about \$6.

## Malting Barley Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	69		118	
Market Price	4.20*		3.50	
MARKET INCOME	289.80		413.00	
DIRECT COSTS				
-Seed	14.88		85.05*	
-Herbicides	19.20		22.00	
-Fungicides	17.00**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	55.42		83.52	
-Crop Insurance	12.80		20.20	
-Fuel & Lubrication	12.28		16.60	
-Repairs	19.81		24.59	
-Drying	0.00		24.78	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.25		5.91	
	======	========	=======	========
SUM OF LISTED DIRECT COSTS	156.13		284.15	<del></del>
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.98		10.24	
-Machinery Depreciation	23.54		34.48	
-Machinery Investment	13.63		19.80	
-Land Investment	70.00		70.00	
Land invocation	=======		=======	
SUM OF LISTED INDIRECT COSTS	115.14		134.52	
SUM OF ALL LISTED COSTS	271.27		418.67	
RETURN TO LABOR & MANAGEMENT	18.53		(5.67)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	2.26		2.41	
-Indirect Costs	1.67		1.14	
-Total Costs	3.93		3.55	
	0.00		3.50	

#### Barley notes:

#### 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.

<sup>\*</sup>There is risk of not making malting barley quality. Use \$2.90 price for feed barley quality.

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

## **Soybeans**

## **Drybeans**

	Per Acre	Your Figures	Per Acre	Your Figures
	1 01 71010	i igai oo	1 01 7 010	i igaioo
Market Yield	31		1580	
Market Price	8.00		0.22	
MARKET INCOME	248.00		347.60	
DIRECT COSTS				
-Seed	65.75*		55.28	
-Herbicides	20.00		45.80	
-Fungicides	0.00		20.00*	
-Insecticides	4.00**		0.00**	
-Fertilizer	7.62		38.04	
-Crop Insurance	12.20		15.70	
-Fuel & Lubrication	9.81		12.73	
-Repairs	18.58		23.06	
-Drying	0.00		0.00	
-Miscellaneous	4.75		12.75	
-Operating Interest	3.03		4.75	
· ·	======		======	========
SUM OF LISTED DIRECT COSTS	145.74	· ————————————————————————————————————	228.11	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.27		8.34	
-Machinery Depreciation	21.89		28.18	
-Machinery Investment	12.53		16.27	
-Land Investment	70.00		70.00	
	======	========	=======	========
SUM OF LISTED INDIRECT COSTS	111.69		122.79	
SUM OF ALL LISTED COSTS	257.43		350.90	
RETURN TO LABOR & MANAGEMENT	(9.43)		(3.30)	
LISTED COSTS PER BUDGET UNIT	(bu)		(lb)	
-Direct Costs	à.7Ó		0.14	
-Indirect Costs	3.60		0.08	
-Total Costs	8.30		0.22	

#### Soybean notes:

#### 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).

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

<sup>\*\*</sup>Soybean aphid and/or spider mite insecticide

<sup>\*</sup>Includes dessicant pror to straight cutting.

<sup>\*\*</sup>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	1480		1230	
Market Price	0.16		0.217	
MARKET INCOME	236.80		266.91	
DIRECT COSTS				
-Seed	33.00		47.50	
-Herbicides	27.00		29.20	
-Fungicides	0.00*		0.00*	
-Insecticides	5.00**		10.00**	
-Fertilizer	34.45		26.33	
-Crop Insurance	11.40		14.40	
-Fuel & Lubrication	11.93		11.60	
-Repairs	19.54		19.33	
-Drying	4.44		3.69	
-Miscellaneous	9.50		17.50	
-Operating Interest	3.32		3.82	
	=======	========	=======	========
SUM OF LISTED DIRECT COSTS	159.58		183.36	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.07		7.93	
-Machinery Depreciation	24.11		23.72	
-Machinery Investment	14.70		14.50	
-Land Investment	70.00		70.00	
	======	========	=======	========
SUM OF LISTED INDIRECT COSTS	116.88		116.14	<del></del>
SUM OF ALL LISTED COSTS	276.46		299.50	
RETURN TO LABOR & MANAGEMENT	(39.66)		(32.59)	
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.11		0.15	
-Indirect Costs	0.08		0.09	
-Total Costs	0.19		0.24	

#### Oil Sunflower notes:

#### Confectionery Sunflower notes:

<sup>\*</sup>Fungicide for rust would cost \$4 plus application.

<sup>\*\*</sup>One spraying for head feeding insects (red seed weevil, lygus bug and banded moths). Custom application cost of \$8 is under "Miscellaneous."

<sup>\*</sup>Fungicide for rust would cost \$4 plus application.

<sup>\*\*</sup>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

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	1530		18	
Market Price	0.146		8.09	
MARKET INCOME	223.38		145.62	
DIRECT COSTS				
-Seed	51.25*		14.50	
-Herbicides	21.30		20.40	
-Fungicides	0.00**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	61.62		20.51	
-Crop Insurance	13.10		5.50	
-Fuel & Lubrication	11.00		10.93	
-Repairs	18.73		19.59	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.79		1.97	
	======	========	=======	=========
SUM OF LISTED DIRECT COSTS	182.29		94.91	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.42		7.50	
<ul> <li>-Machinery Depreciation</li> </ul>	21.67		22.32	
-Machinery Investment	13.13	·	13.75	
-Land Investment	70.00	· ————————————————————————————————————	70.00	
SUM OF LISTED INDIRECT COSTS	112.22	========	====== 113.57	========
SOM OF EIGTED INDIFFECT COSTS	112.22		113.37	
SUM OF ALL LISTED COSTS	294.51		208.49	
RETURN TO LABOR & MANAGEMENT	(71.13)		(62.87)	
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.12		5.27	
-Indirect Costs	0.07		6.31	
-Total Costs	0.19		11.58	

#### Canola notes:

<sup>\*</sup>Cost includes insecticide seed treatment for flea beetles.

<sup>\*\*</sup>Fungicide for white mold would cost about \$18 plus application.

## **Field Peas**

## **Oats**

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	35		66	
Market Price	6.42		2.26	
MARKET INCOME	224.70		149.16	
DIRECT COSTS				
-Seed	42.00		12.00	
-Herbicides	29.70		5.25	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	9.97		42.95	
-Crop Insurance	10.90		7.40	
-Fuel & Lubrication	11.52		12.83	
-Repairs	20.66		20.25	
-Drying	0.00		0.00	
-Miscellaneous	9.25		1.50	
-Operating Interest	2.88		2.17	
- Fr 3	=======		=======	
SUM OF LISTED DIRECT COSTS	138.38		104.34	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.68	<del></del>	8.15	
-Machinery Depreciation	24.23		24.14	
-Machinery Investment	13.77		14.33	
-Land Investment	70.00		70.00	
-Land investment	70.00		70.00	
SUM OF LISTED INDIRECT COSTS	115.68		116.62	
SUM OF ALL LISTED COSTS	254.06		220.96	
RETURN TO LABOR & MANAGEMENT	(29.36)		(71.80)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.95		1.58	
-Indirect Costs	3.31	-	1.77	
-Total Costs	7.26		3.35	
.0.0.0	,0		0.00	

#### Field Pea notes:

For 2016, yellow and green peas are expected to have very similar returns and costs.

## Yellow Mustard Buckwheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	850		950	
Market Price	0.31		0.214	
MARKET INCOME	263.50		203.30	
DIRECT COSTS				
-Seed	24.00		30.00	
-Herbicides	13.70		11.50	
-Fungicides	0.00		0.00	
-Insecticides	6.00*		0.00	
-Fertilizer	24.08		16.47	
-Crop Insurance	0.00**		9.50*	
-Fuel & Lubrication	10.11		10.27	
-Repairs	18.51		18.63	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	2.08		2.08	
	======	=========	=======	=========
SUM OF LISTED DIRECT COSTS	99.98	<del></del> -	99.95	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.19		7.29	
-Machinery Depreciation	21.28		21.50	
-Machinery Investment	12.81		12.92	
-Land Investment	70.00		70.00	
SUM OF LISTED INDIRECT COSTS	111.29		======= 111.71	
SUM OF ALL LISTED COSTS	211.27		211.66	
RETURN TO LABOR & MANAGEMENT	52.23		(8.36)	
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.12		0.11	
-Indirect Costs	0.13		0.12	
-Total Costs	0.25		0.22	
	3.20	-	V	

Yellow Mustard notes:

#### Buckwheat notes:

<sup>\*</sup>Insecticide seed treatment for flea beetles.

<sup>\*\*</sup>Crop insurance is not available.

<sup>\*</sup>Crop insurance is not available in most counties of the region.

## Millet Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1700		51*	
Market Price	0.065		4.55	
MARKET INCOME	110.50		232.05	
DIRECT COSTS				
-Seed	6.25		10.20	
-Herbicides	3.25		23.90	
-Fungicides	0.00		9.00	
-Insecticides	0.00		0.00	
-Fertilizer	25.41		68.31	
-Crop Insurance	0.00		12.10	
-Fuel & Lubrication	11.48		9.92	
-Repairs	19.37		17.39	
-Drying	0.00		0.00	
-Miscellaneous	1.50		7.50	
-Operating Interest	1.43		3.36	
5 P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=======		=======	
SUM OF LISTED DIRECT COSTS	68.69		161.68	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.59		7.04	
-Machinery Depreciation	22.57	-	20.20	-
-Machinery Investment	13.49		11.12	
-Land Investment	70.00		70.00	
Land investment	70.00		70.00	
SUM OF LISTED INDIRECT COSTS	113.65		108.36	
SUM OF ALL LISTED COSTS	182.34		270.05	
RETURN TO LABOR & MANAGEMENT	(71.84)		(38.00)	
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.04		3.17	
-Indirect Costs	0.07		2.12	
-Total Costs	0.11		5.30	
			<del>-</del>	

#### Winter Wheat notes:

<sup>\*</sup>Yield is per harvested acre. There is some risk of acreage abandonment in spring.

## Rye

	Per Acre	Your Figures
Market Yield Market Price	45 4.60	
MARKET INCOME	207.00	
-Seed -Herbicides -Fungicides -Insecticides -Fertilizer -Crop Insurance -Fuel & Lubrication -Repairs -Drying -Miscellaneous -Operating Interest	9.60 6.50 0.00 0.00 58.67 10.20 9.71 16.97 0.00 7.50 2.53	
SUM OF LISTED DIRECT COSTS	121.68	
INDIRECT (FIXED) COSTS -Misc. Overhead -Machinery Depreciation -Machinery Investment -Land Investment	6.98 19.95 11.10 70.00	
SUM OF LISTED INDIRECT COSTS	108.03	
SUM OF ALL LISTED COSTS	229.71	
RETURN TO LABOR & MANAGEMENT	(22.71)	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(bu) 2.70 2.40 5.10	

## 2016 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)	38300	150 hr	15	12200	11.60 /hr	7.58 /hr	7.85 /hr	
Semi & Trailer (used)	42900	150 hr	10	12250	20.43 /hr	8.27 /hr	9.47 /hr	
Pick-up Truck	30600	300 hr	10	6000	8.20 /hr	2.75 /hr	3.55 /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 16-30	112800	1400 ac	15	46864	3.14 /ac	2.57 /ac	4.67 /ac	14.2
Corn head 8R	58600	800 ac	12	16808	4.35 /ac	2.12 /ac	1.36 /ac	6.8
Grain head w/pu	15600	800 ac	20	1536	0.88 /ac	0.48 /ac	0.25 /ac	10.2
Grain str. cut 30 ft	26000	2000 ac	8	10508	0.97 /ac	0.41 /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	30000	100 hr	20	5100	12.45 /hr	7.90 /hr	7.50 /hr	
Grain auger	12700	50 hr	20	735	11.97 /hr	6.05 /hr	4.70 /hr	

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