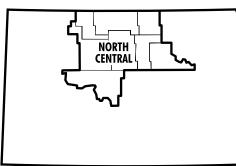


#### FARM MANAGEMENT PLANNING GUIDE

December 2014

## Projected 2015 Crop Budgets



# North Central North Dakota

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The 2015 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 2015 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.

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, and elimanted the direct and counter-cyclical 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.

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 2007-2013, after the low and high yield years are removed. Yields for safflower, yellow mustard, buck-wheat, 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	- 35 lb
Phosphorus	- 8 ppm
Potassium	- 363 ppm

#### Fertilizer prices:

Nitrogen	46/lb
Phosphorus	45/lb
Potassium	38/lb

#### Seed Prices:

eed Prices:	
Spring Wheat	11.00/bu
Durum	18.50/bu
Barley	9.00/bu
Corn grain RR/Bt	2.70/thou.kern.
Corn grain RR	2.50/thou.kern.
Soybean RR2	.35/thou.kern.
Dry Beans	.88/lb
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.50/thou.kern.
Canola	10.25/lb
Flax	18.00/bu
Field Peas	12.75/bu
Oats	6.00/bu
Lentils	.40/lb
Mustard	1.70/lb
Buckwheat	.62/lb
Millet	.30/lb
Winter Wheat	10.50/bu
Rye	9.50/bu

#### Fuel prices:

Diesel 2.65/gal Gas 2.60/gal

Lubrication charge: 15% of fuel cost

- **Crop Insurance:** Coverage levels are 70% on all insurable crops. Yield Protection or APH insurance estimates are used, except for Revenue Protection on all wheat, barley, soybeans, corn, canola, sunflowers and dry beans.
- **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	42		39	
Market Price	5.95		6.95*	
MARKET INCOME	249.90		271.05	
DIRECT COSTS				
-Seed	17.60		37.00	
-Herbicides	26.20		26.20	
-Fungicides**	5.50		5.50	
-Insecticides***	0.00		0.00	
-Fertilizer	59.83		54.41	
-Crop Insurance	12.90		14.80	
-Fuel & Lubrication	14.61		14.42	
-Repairs	18.14		18.06	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.32		3.65	
1 0				
SUM OF LISTED DIRECT COSTS	159.60		175.54	
INDIRECT (FIXED) COSTS				
-Misc. Överhead	7.22		7.17	
-Machinery Depreciation	20.83		20.68	
-Machinery Investment	12.17		12.09	
-Land Charge	50.00		50.00	
ge	========		=======	
SUM OF LISTED INDIRECT COSTS	90.21		89.94	
SUM OF ALL LISTED COSTS	249.82	<u> </u>	265.48	
RETURN TO LABOR & MANAGEMENT	0.08		5.57	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(bu) 3.80 2.15 5.95		(bu) 4.50 2.31 6.81	

Wheat notes:

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

\*\*Includes seed treatment (\$1.50-\$2.00) and early season foliar fungicide (\$2-\$4.50). Late season fungicides are often warranted in this region. For fusarium head blight (scab) control, prothioconazole or metconazole containing products (about \$12) are highly recommended when a more susceptable cultivar is grown and/or when conditions are favorable for infection.

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

### Malting Barley Corn Grain

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	63		97	
Market Price	4.66*		3.50	
MARKET INCOME	293.58		339.50	
DIRECT COSTS				
-Seed	14.40		76.95*	
-Herbicides	23.70		21.00	
-Fungicides	5.50**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	54.60		73.25	
-Crop Insurance	15.50		27.80	
-Fuel & Lubrication	15.83		21.20	
-Repairs	18.55		22.35	
-Drying	0.00		20.37	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.18		5.62	
1 3				
SUM OF LISTED DIRECT COSTS	152.75		270.04	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.56		9.43	
-Machinery Depreciation	21.72		31.68	
-Machinery Investment	12.61		17.91	
-Land Charge	50.00		50.00	
Earla Onargo	=======		=======	
SUM OF LISTED INDIRECT COSTS	91.89		109.01	
SUM OF ALL LISTED COSTS	244.64		379.06	
RETURN TO LABOR & MANAGEMENT	48.94		(39.56)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	2.42		2.78	
-Indirect Costs	1.46		1.12	
-Total Costs	3.88		3.91	

Barley notes:

\*On average, about 35% of production is feed quality. Use \$2.87 estimate for feed barley price.

\*\*Includes seed treatment (\$1.50-\$2.00) and early season foliar fungicide (\$2-\$4.50). Late season fungicides, prothioconazole or metconazole containing products, for fusarium head blight (scab) control are recommended when conditions are favorable for infection.

Corn notes:

\*RR/Bt corn. 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	31		1550	
Market Price	8.85		0.25	
MARKET INCOME	274.35		387.50	
DIRECT COSTS				
-Seed	69.25*		44.00	
-Herbicides	20.00		45.80*	
-Fungicides	0.00		0.00**	
-Insecticides	0.00**		0.00	
-Fertilizer	7.80		41.06	
-Crop Insurance	11.20		15.40	
-Fuel & Lubrication	12.00		16.83	
-Repairs	16.15		21.32	
-Drying	0.00		0.00	
-Miscellaneous	4.75		12.75	
-Operating Interest	3.00		4.19	
1 3			=======	
SUM OF LISTED DIRECT COSTS	144.15		201.35	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.68		7.92	
-Misc. Overhead -Machinery Depreciation	19.58		26.55	
-Machinery Depreciation -Machinery Investment	10.76		15.04	
	50.00			
-Land Charge	50.00		50.00	
SUM OF LISTED INDIRECT COSTS	======= 87.02		======= 99.51	
SUM OF ALL LISTED COSTS	231.18		300.86	
RETURN TO LABOR & MANAGEMENT	43.17		86.64	
LISTED COSTS PER BUDGET UNIT	(bu)		(lb)	
-Direct Costs	4.65		0.13	
-Indirect Costs	2.81		0.06	
-Total Costs	7.46		0.19	

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 would cost about \$7 per acre plus application.

Drybean notes:

\*Includes dessicant prior to straight cutting.

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

Fungicide for rust at \$2-\$4.50 plus application maybe necessary.

#### Oil Sunflower

#### Confectionery Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1510		1430	
Market Price	0.177		0.249	
MARKET INCOME	267.27		356.07	
DIRECT COSTS				
-Seed	31.50*		45.00*	
-Herbicides	33.20		35.30	
-Fungicides	0.00**		0.00**	
-Insecticides	7.00***		14.00***	
-Fertilizer	39.03		36.11	
-Crop Insurance	9.70		12.40	
-Fuel & Lubrication	16.07		15.91	
-Repairs	18.72		18.65	
-Drying	4.53		4.29	
-Miscellaneous	9.50		17.50	
-Operating Interest	3.60		4.23	
			========	
SUM OF LISTED DIRECT COSTS	172.85		203.40	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.79		7.74	
-Machinery Depreciation	23.11		22.99	
-Machinery Investment	13.89		13.82	
-Land Charge	50.00		50.00	
Land Onalgo	========		=======	
SUM OF LISTED INDIRECT COSTS	94.78		94.55	
SUM OF ALL LISTED COSTS	267.63		297.95	
RETURN TO LABOR & MANAGEMENT	(0.36)		58.12	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(lb) 0.11 0.06 0.18		(lb) 0.14 0.07 0.21	

Oil Sunflower notes:

\*Cost includes seed treatment for control of wireworm and flea beetle.

\*\*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." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

Confectionery Sunflower notes:

\*Cost includes seed treatment for control of wireworm and flea beetle.

\*\*Fungicide for rust would cost \$4 plus application.

\*\*\*Two sprayings for head feeding insects (red seed weevil, lygus bug and banded moths) at about \$7 per application. Each custom application cost of \$8 is under "Miscellaneous." Insecticide treatment for cutworms would cost about \$5 plus application (usually tank mixed with herbicide).

#### Canola

### Flax

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1570		21	
Market Price	0.172		11.45	
MARKET INCOME	270.04		240.45	
DIRECT COSTS				
-Seed	51.25*		14.40	
-Herbicides	20.70		28.50	
-Fungicides	0.00**		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	69.23		28.77	
-Crop Insurance	11.00		6.60	
-Fuel & Lubrication	14.60		13.44	
-Repairs	18.18		17.80	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	3.96		2.36	
	=======	===========	=======	==========
SUM OF LISTED DIRECT COSTS	190.41		113.37	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.19		6.89	
-Machinery Depreciation	21.18		20.00	
-Machinery Investment	12.49		11.77	
-Land Charge	50.00		50.00	
C C				
SUM OF LISTED INDIRECT COSTS	90.86		88.66	
SUM OF ALL LISTED COSTS	281.28		202.04	
RETURN TO LABOR & MANAGEMENT	(11.24)		38.41	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(lb) 0.12 0.06 0.18		(bu) 5.40 4.22 9.62	

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	40		66	
Market Price	6.30*		2.49	
MARKET INCOME	252.00		164.34	
DIRECT COSTS				
-Seed	38.25**		12.00	
-Herbicides	31.75		9.80	
-Fungicides	1.50		0.00	
-Insecticides	0.00***		0.00	. <u></u>
-Fertilizer	11.65		47.41	. <u></u> _
-Crop Insurance	7.50		8.30	
-Fuel & Lubrication	14.19		17.05	
-Repairs	18.56		19.42	
-Drying	0.00		0.00	
-Miscellaneous	9.25		1.50	
-Operating Interest	2.82		2.45	
	=======	=======	=======	===========
SUM OF LISTED DIRECT COSTS	135.47		117.94	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	7.19		8.00	
-Machinery Depreciation	22.32		23.00	
-Machinery Investment	12.14		13.99	
-Land Charge	50.00		50.00	
SUM OF LISTED INDIRECT COSTS	====== 91.65		======= 94.99	
SUM OF ALL LISTED COSTS	227.12		212.93	
RETURN TO LABOR & MANAGEMENT	24.88		(48.59)	
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.39		1.79	
-Indirect Costs	2.29		1.44	
-Total Costs	5.68		3.23	

Field Pea Notes:

\*Yellow pea food quality price. Use \$7.80 for green pea food quality and about \$4.00 for feed quality peas. \*\*Yellow pea seed cost, use \$47 per acre for green peas. \*\*\*Insecticide treatment for cutworms and/or pea aphids would cost about \$5 per acre plus application.

#### Lentils

### **Yellow Mustard**

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	1460		900	
Market Price	0.23		0.294	
MARKET INCOME	335.80		264.60	
DIRECT COSTS				
-Seed	28.00		20.40	
-Herbicides	36.40*		20.10	
-Fungicides	0.00**		0.00	
-Insecticides	0.00***		6.00*	
-Fertilizer	7.09		28.57	
-Crop Insurance	13.20		15.50**	
-Fuel & Lubrication	13.78		13.95	
-Repairs	19.27		18.07	
-Drying	0.00	· · · · · · · · · · · · · · · · · · ·	0.00	
-Miscellaneous	9.25		1.50	
-Operating Interest	2.70		2.64	
Operating interest	=======		=======	
SUM OF LISTED DIRECT COSTS	129.69		126.73	
INDIRECT (FIXED) COSTS			= 40	
-Misc. Overhead	7.26		7.12	
-Machinery Depreciation	22.50		20.58	
-Machinery Investment	12.44		12.70	
-Land Charge	50.00		50.00	
	=======	=======	=======	
SUM OF LISTED INDIRECT COSTS	92.19		90.40	
SUM OF ALL LISTED COSTS	221.88		217.13	
RETURN TO LABOR & MANAGEMENT	113.92		47.47	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(lb) 0.09 0.06 0.15		(lb) 0.14 0.10 0.24	

Lentil notes:

\*Includes pre-harvest dessicant.

\*\*Fungicide treatment for ascochyta/anthracnose would cost about \$16 plus application. \*\*\*Insecticide treatment for cutworms would cost about \$5 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	0.243		0.075	
MARKET INCOME	230.85		97.50	
DIRECT COSTS				
-Seed	31.00		7.50	
-Herbicides	18.10		9.70	
-Fungicides	0.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	17.53		17.42	
-Crop Insurance	10.50*		0.00	
-Fuel & Lubrication	13.65		14.57	
-Repairs	17.44		18.34	
-Drying	0.00		0.00	
-Miscellaneous	1.50		1.50	
-Operating Interest	2.33		1.47	
	=======	========	=======	
SUM OF LISTED DIRECT COSTS	112.05		70.50	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.97		7.30	
-Machinery Depreciation	20.09		21.06	
-Machinery Investment	12.03		12.96	
-Land Charge	50.00		50.00	
	========		=======	
SUM OF LISTED INDIRECT COSTS	89.09		91.31	
SUM OF ALL LISTED COSTS	201.15		161.81	
RETURN TO LABOR & MANAGEMENT	29.70		(64.31)	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(lb) 0.12 0.09 0.21		(lb) 0.05 0.07 0.12	

Buckwheat notes:

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

#### Winter Wheat

### Rye

		Your		Your
	Per Acre	Figures	Per Acre	Figures
Market Yield	50*		44	
Market Price	5.41		6.01	
MARKET INCOME	270.50		264.44	
DIRECT COSTS				
-Seed	11.55		11.40	
-Herbicides	23.90		6.50	
-Fungicides	9.00		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	74.30		63.45	
-Crop Insurance	13.70		10.90	
-Fuel & Lubrication	14.38		14.08	
-Repairs	17.12		16.70	
-Drying	0.00		0.00	
-Miscellaneous	7.50		7.50	
-Operating Interest	3.64		2.77	
	=======			
SUM OF LISTED DIRECT COSTS	175.09		133.30	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	6.93		6.86	
-Machinery Depreciation	19.84		19.59	
-Machinery Investment	10.93		10.91	
-Land Charge	50.00		50.00	
Earla Onargo	=======		=======	
SUM OF LISTED INDIRECT COSTS	87.70		87.37	
SUM OF ALL LISTED COSTS	262.79		220.67	
RETURN TO LABOR & MANAGEMENT	7.71		43.77	
LISTED COSTS PER BUDGET UNIT -Direct Costs -Indirect Costs -Total Costs	(bu) 3.50 1.75 5.26		(bu) 3.03 1.99 5.02	

Winter Wheat notes:

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

### 2015 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 140HP Tractor	128100	400 hr	20	40090	11.00 /hr	9.46 /hr	12.66 /hr	
FWA 180HP Tractor	173600	500 hr	15	49843	16.50 /hr	10.05 /hr	17.15 /hr	
4WD 340HP Tractor	228700	500 hr	15	65685	21.74 /hr	13.25 /hr	12.92 /hr	
SP Combine (base unit)	277800	250 hr	12	67068	70.24 /hr	31.04 /hr	43.77 /hr	
Tandem Truck (used)	37700	150 hr	15	12000	11.42 /hr	7.46 /hr	7.73 /hr	
Semi & Trailer (used)	42300	150 hr	10	12100	20.13 /hr	8.16 /hr	9.33 /hr	
Pick-up Truck	29800	300 hr	10	5900	7.97 /hr	2.68 /hr	3.50 /hr	
Swather 30 ft	30200	1000 ac	20	7152	1.15 /ac	0.84 /ac	0.49 /ac	13.1
Sprayer 90 ft	38200	5000 ac	10	19024	0.38 /ac	0.26 /ac	0.49 /ac	42.5
Heavy Harrow 70 ft	30600	2000 ac	20	17837	0.32 /ac	0.55 /ac	0.34 /ac	39.7
Air Seeder 40 ft	178100	2400 ac	10	91039	3.62 /ac	2.52 /ac	6.16 /ac	17.0
Planter 16-30	111100	1400 ac	15	46192	3.09 /ac	2.53 /ac	4.61 /ac	14.2
Corn head	57800	800 ac	12	16565	4.29 /ac	2.09 /ac	1.34 /ac	6.8
Grain head w/pu	15400	800 ac	20	1511	0.87 /ac	0.47 /ac	0.24 /ac	10.2
Grain str. cut 30 ft	25600	2000 ac	8	10336	0.95 /ac	0.40 /ac	0.40 /ac	10.2
Head w/sunf pans 30 ft	30800	600 ac	20	3148	2.30 /ac	1.27 /ac	0.48 /ac	10.2
Flex head 30 ft	38000	1000 ac	20	3486	1.72 /ac	0.93 /ac	0.59 /ac	10.2
Rock picker	22000	50 hr	20	7013	0.50 /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	12500	50 hr	20	725	11.78 /hr	5.95 /hr	4.70 /hr	

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