



FARM MANAGEMENT PLANNING GUIDE

December 2017

Projected 2018 Crop Budgets



South Valley North Dakota

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The 2018 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 2018 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. 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 2010-2016, 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.

Soil test - recrop:
 Nitrogen - 33 lb
 Phosphorus - 10 ppm
 Potassium - 278 ppm

Fertilizer prices:
 Nitrogen - .37/lb
 Phosphorus - .40/lb
 Potassium - .27/lb

Seed Prices:

Spring Wheat	10.00/bu
Barley	8.00/bu
Corn GM	2.78/thou.kern.
Soybean GM	.33/thou.kern.
Dry Beans	.68/thou.kern.
Oil Sunflower	1.50/thou.kern.
Conf. Sunflower	2.70/thou.kern.
Oats	6.50/bu
Winter Wheat	7.75/bu

Fuel prices:

Diesel	2.20/gal
Gas	2.45/gal

Lubrication charge: 15% of fuel cost

Crop Insurance: Revenue Protection was used for all wheat, barley, soybeans, corn, canola, sunflowers, field peas 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 5.1% 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, \$4.00 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: 4.5% 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

Malting Barley

	Your Per Acre	Figures	Your Per Acre	Figures
Market Yield	61	_____	79	_____
Market Price	5.77	_____	3.49*	_____
MARKET INCOME	351.97	_____	275.71	_____
DIRECT COSTS				
-Seed	20.00	_____	16.00	_____
-Herbicides	22.00	_____	19.20	_____
-Fungicides	17.00*	_____	17.00**	_____
-Insecticides	0.00**	_____	0.00	_____
-Fertilizer	73.86	_____	56.50	_____
-Crop Insurance	10.00	_____	11.30	_____
-Fuel & Lubrication	16.19	_____	16.95	_____
-Repairs	20.82	_____	21.08	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	7.50	_____	7.50	_____
-Operating Interest	4.78	_____	4.22	_____
SUM OF LISTED DIRECT COSTS	192.15	=====	169.74	=====
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.92	_____	9.20	_____
-Machinery Depreciation	24.21	_____	24.93	_____
-Machinery Investment	14.33	_____	14.67	_____
-Land Charge	124.00	_____	124.00	_____
SUM OF LISTED INDIRECT COSTS	171.46	=====	172.80	=====
SUM OF ALL LISTED COSTS	363.60	_____	342.55	_____
RETURN TO LABOR & MANAGEMENT	(11.63)	_____	(66.84)	_____
LISTED COSTS PER BUDGET UNIT	(bu)		(bu)	
-Direct Costs	3.15	_____	2.15	_____
-Indirect Costs	2.81	_____	2.19	_____
-Total Costs	5.96	_____	4.34	_____

Spring Wheat notes:

*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) infection.

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

Barley notes:

*There is risk of not making malting barley quality. Use \$2.70 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) infection.

Corn Grain

Soybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	144		38	
Market Price	3.25		8.97	
MARKET INCOME	468.00		340.86	
DIRECT COSTS				
-Seed	93.13*		65.75*	
-Herbicides	26.00		28.00	
-Fungicides	0.00		0.00	
-Insecticides	0.00		4.00**	
-Fertilizer	90.38		2.96	
-Crop Insurance	19.10		10.20	
-Fuel & Lubrication	22.23		13.39	
-Repairs	27.85		19.20	
-Drying	25.92		0.00	
-Miscellaneous	7.50		1.50	
-Operating Interest	7.96		3.70	
SUM OF LISTED DIRECT COSTS	320.06		148.71	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	11.84		8.33	
-Machinery Depreciation	37.60		22.59	
-Machinery Investment	21.57		13.15	
-Land Charge	124.00		124.00	
SUM OF LISTED INDIRECT COSTS	195.01		168.07	
SUM OF ALL LISTED COSTS	515.07		316.78	
RETURN TO LABOR & MANAGEMENT	(47.07)		24.08	
LISTED COSTS PER BUDGET UNIT				
	(bu)		(bu)	
-Direct Costs	2.22		3.91	
-Indirect Costs	1.35		4.42	
-Total Costs	3.58		8.34	

Corn notes:

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

Soybean notes:

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

**Soybean aphid and/or spider mite insecticide.

Drybeans

Oil Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1840		1770	
Market Price	0.225		0.174	
MARKET INCOME	414.00		307.98	
DIRECT COSTS				
-Seed	56.10		36.00	
-Herbicides	45.80*		27.00	
-Fungicides	20.00**		0.00*	
-Insecticides	0.00		5.00**	
-Fertilizer	40.82		38.18	
-Crop Insurance	24.50		14.70	
-Fuel & Lubrication	14.97		15.34	
-Repairs	21.90		19.59	
-Drying	0.00		5.31	
-Miscellaneous	15.50		15.50	
-Operating Interest	6.11		4.50	
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	245.70		181.13	
INDIRECT (FIXED) COSTS				
-Misc. Overhead	8.93		9.26	
-Machinery Depreciation	26.59		25.67	
-Machinery Investment	15.39		15.65	
-Land Charge	124.00		124.00	
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	174.91		174.58	
SUM OF ALL LISTED COSTS	420.61		355.70	
RETURN TO LABOR & MANAGEMENT	(6.61)		(47.72)	
LISTED COSTS PER BUDGET UNIT	(lb)		(lb)	
-Direct Costs	0.13		0.10	
-Indirect Costs	0.10		0.10	
-Total Costs	0.23		0.20	

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 dessicant 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 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

Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1670	_____	85	_____
Market Price	0.233	_____	2.11	_____
MARKET INCOME	389.11	_____	179.35	_____
DIRECT COSTS				
-Seed	54.00	_____	13.00	_____
-Herbicides	29.20	_____	5.25	_____
-Fungicides	0.00*	_____	0.00	_____
-Insecticides	10.00**	_____	0.00	_____
-Fertilizer	35.33	_____	51.28	_____
-Crop Insurance	19.70	_____	8.00	_____
-Fuel & Lubrication	15.19	_____	18.18	_____
-Repairs	19.50	_____	21.94	_____
-Drying	5.01	_____	0.00	_____
-Miscellaneous	23.50	_____	7.50	_____
-Operating Interest	5.39	_____	3.19	_____
	=====	=====	=====	=====
SUM OF LISTED DIRECT COSTS	216.83	_____	128.35	_____
INDIRECT (FIXED) COSTS				
-Misc. Overhead	9.20	_____	9.60	_____
-Machinery Depreciation	25.51	_____	26.31	_____
-Machinery Investment	15.56	_____	15.80	_____
-Land Charge	124.00	_____	124.00	_____
	=====	=====	=====	=====
SUM OF LISTED INDIRECT COSTS	174.27	_____	175.71	_____
SUM OF ALL LISTED COSTS	391.09	_____	304.06	_____
RETURN TO LABOR & MANAGEMENT	(1.98)	_____	(124.71)	_____
LISTED COSTS PER BUDGET UNIT	(lb)		(bu)	
-Direct Costs	0.13	_____	1.51	_____
-Indirect Costs	0.10	_____	2.07	_____
-Total Costs	0.23	_____	3.58	_____

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."

Winter Wheat

	Per Acre	Your Figures
Market Yield	58*	_____
Market Price	4.51	_____
MARKET INCOME	261.58	_____
DIRECT COSTS		
-Seed	10.08	_____
-Herbicides	23.90	_____
-Fungicides	9.00	_____
-Insecticides	0.00	_____
-Fertilizer	69.63	_____
-Crop Insurance	9.70	_____
-Fuel & Lubrication	14.51	_____
-Repairs	19.23	_____
-Drying	0.00	_____
-Miscellaneous	7.50	_____
-Operating Interest	4.17	_____
	=====	=====
SUM OF LISTED DIRECT COSTS	167.72	_____
INDIRECT (FIXED) COSTS		
-Misc. Overhead	8.50	_____
-Machinery Depreciation	22.59	_____
-Machinery Investment	13.03	_____
-Land Charge	124.00	_____
	=====	=====
SUM OF LISTED INDIRECT COSTS	168.11	_____
SUM OF ALL LISTED COSTS	335.83	_____
RETURN TO LABOR & MANAGEMENT	(74.25)	_____
LISTED COSTS PER BUDGET UNIT	(bu)	
-Direct Costs	2.89	_____
-Indirect Costs	2.90	_____
-Total Costs	5.79	_____

Winter Wheat notes:

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

2018 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 150HP Tractor	136000	400 hr	20	42564	11.68 /hr	10.04 /hr	13.44 /hr	
FWA 190HP Tractor	178800	500 hr	15	51357	16.99 /hr	10.36 /hr	17.67 /hr	
4WD 370HP Tractor	255000	500 hr	15	73227	24.24 /hr	14.77 /hr	14.40 /hr	
SP Combine (base unit)	290000	250 hr	12	70023	73.33 /hr	32.40 /hr	45.70 /hr	
Tandem Truck (used)	39200	150 hr	15	12500	11.87 /hr	7.76 /hr	8.04 /hr	
Semi & Trailer (used)	46000	150 hr	10	13100	21.93 /hr	8.87 /hr	9.93 /hr	
Pick-up Truck	33000	300 hr	10	7600	8.47 /hr	3.05 /hr	3.78 /hr	
Swather 30 ft	31100	1000 ac	20	7354	1.19 /ac	0.86 /ac	0.50 /ac	13.1
Sprayer 90 ft	39400	5000 ac	10	19574	0.40 /ac	0.27 /ac	0.50 /ac	42.5
Chisel Plow 38 ft	45500	3000 ac	15	26571	0.42 /ac	0.54 /ac	1.01 /ac	19.6
Field Cultivator 48 ft	52500	3000 ac	15	30693	0.49 /ac	0.62 /ac	0.92 /ac	24.7
Tandem Disk 28 ft	34800	800 ac	20	9976	1.55 /ac	1.26 /ac	0.88 /ac	13.6
Heavy Harrow 70 ft	31500	2000 ac	20	18372	0.33 /ac	0.56 /ac	0.35 /ac	39.7
Air Seeder 40 ft	183500	2400 ac	10	93777	3.73 /ac	2.59 /ac	6.35 /ac	17.0
Planter 24-22	137300	1600 ac	15	57113	3.34 /ac	2.73 /ac	5.18 /ac	15.6
Corn head 12R w/chopper	127500	1000 ac	15	24411	6.87 /ac	3.42 /ac	2.69 /ac	7.5
Grain head w/pu	18700	800 ac	20	1807	1.05 /ac	0.58 /ac	0.29 /ac	10.2
Grain str. cut 35 ft	30800	1000 ac	15	6416	1.62 /ac	0.84 /ac	0.41 /ac	11.9
Head w/sunf pans	37100	600 ac	20	3883	2.76 /ac	1.53 /ac	0.49 /ac	11.9
Flex head 35 ft	45100	1000 ac	20	4289	2.04 /ac	1.11 /ac	0.60 /ac	11.9
Grain Cart	36600	100 hr	20	6200	15.20 /hr	9.63 /hr	8.60 /hr	
Grain auger	13500	50 hr	20	780	12.72 /hr	6.43 /hr	5.00 /hr	

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