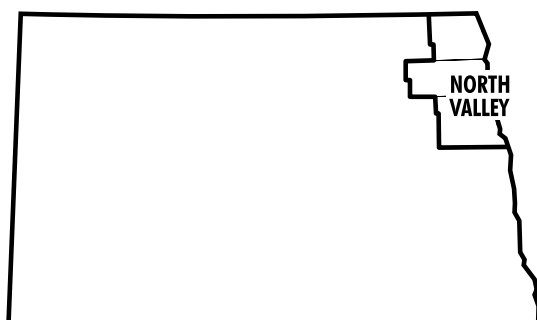




# FARM MANAGEMENT PLANNING GUIDE

December 2019

## Projected 2020 Crop Budgets



# North Valley North Dakota

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The 2020 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 2020 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 2012-2018, 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 - 30 lb  
 Phosphorus - 10 ppm  
 Potassium - 280 ppm

**Fertilizer prices:**  
 Nitrogen - .37/lb  
 Phosphorus - .36/lb  
 Potassium - .31/lb

### Seed Prices:

Spring Wheat	10.25/bu
Durum	11.75/bu
Barley	8.25/bu
Corn GM	2.69/thou.kern.
Soybean GM	.34/thou.kern.
Dry Beans	.73/thou.kern.
Oil Sunflower	1.55/thou.kern.
Conf. Sunflower	2.75/thou.kern.
Canola	11.30/lb
Flax	17.50/bu
Field Peas	14.00/bu
Oats	6.25/bu
Mustard	2.10/lb
Winter Wheat	9.00/bu

### Fuel prices:

Diesel	2.45/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, 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 5.4% 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

## Durum

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	62	_____	59	_____
Market Price	5.06	_____	5.56*	_____
<b>MARKET INCOME</b>	<b>313.72</b>	_____	<b>328.04</b>	_____
<b>DIRECT COSTS</b>				
-Seed	20.50	_____	23.50	_____
-Herbicides	22.50	_____	22.50	_____
-Fungicides**	17.00	_____	17.00	_____
-Insecticides***	0.00	_____	0.00	_____
-Fertilizer	71.78	_____	67.77	_____
-Crop Insurance	7.50	_____	12.00	_____
-Fuel & Lubrication	17.92	_____	17.76	_____
-Repairs	21.48	_____	21.39	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.00	_____	8.00	_____
-Operating Interest	5.04	_____	5.13	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>191.71</b>	_____	<b>195.04</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.09	_____	9.04	_____
-Machinery Depreciation	25.05	_____	24.89	_____
-Machinery Investment	14.82	_____	14.73	_____
-Land Charge	90.00	_____	90.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>138.96</b>	_____	<b>138.66</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>330.68</b>	_____	<b>333.71</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(16.96)</b>	_____	<b>(5.67)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.09	_____	3.31	_____
-Indirect Costs	2.24	_____	2.35	_____
-Total Costs	5.33	_____	5.66	_____

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. Wheat midge insecticide would cost about \$6.

## Malting Barley

## Corn Grain

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	74	_____	138	_____
Market Price	3.33*	_____	3.35	_____
<b>MARKET INCOME</b>	<b>246.42</b>	_____	<b>462.30</b>	_____
<b>DIRECT COSTS</b>				
-Seed	16.50	_____	84.74*	_____
-Herbicides	19.70	_____	27.00	_____
-Fungicides	17.00**	_____	0.00	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	49.73	_____	81.64	_____
-Crop Insurance	6.50	_____	14.00	_____
-Fuel & Lubrication	18.45	_____	24.28	_____
-Repairs	21.57	_____	28.68	_____
-Drying	0.00	_____	24.84	_____
-Miscellaneous	8.00	_____	8.00	_____
-Operating Interest	4.25	_____	7.92	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>161.70</b>	=====	<b>301.08</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.17	_____	12.01	_____
-Machinery Depreciation	24.97	_____	38.63	_____
-Machinery Investment	14.64	_____	22.17	_____
-Land Charge	90.00	_____	90.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>138.77</b>	=====	<b>162.81</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>300.47</b>	_____	<b>463.89</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(54.05)</b>	_____	<b>(1.59)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	2.19	_____	2.18	_____
-Indirect Costs	1.88	_____	1.18	_____
-Total Costs	4.06	_____	3.36	_____

### Barley notes:

\*There is risk of not making malting barley quality. Use \$2.40 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 ground insect control traits.

## Soybeans

## Drybeans

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	36	_____	1830	_____
Market Price	8.22	_____	0.27	_____
<b>MARKET INCOME</b>	<b>295.92</b>	_____	<b>494.10</b>	_____
<b>DIRECT COSTS</b>				
-Seed	65.80*	_____	60.23	_____
-Herbicides	28.00	_____	46.90*	_____
-Fungicides	0.00	_____	20.00**	_____
-Insecticides	4.00**	_____	0.00	_____
-Fertilizer	2.43	_____	38.45	_____
-Crop Insurance	7.00	_____	20.00	_____
-Fuel & Lubrication	14.65	_____	16.90	_____
-Repairs	19.71	_____	22.82	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	16.00	_____
-Operating Interest	3.86	_____	6.51	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>146.95</b>	=====	<b>247.80</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.43	_____	9.19	_____
-Machinery Depreciation	23.21	_____	27.46	_____
-Machinery Investment	13.51	_____	16.09	_____
-Land Charge	90.00	_____	90.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>135.15</b>	=====	<b>142.74</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>282.10</b>	_____	<b>390.54</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>13.82</b>	_____	<b>103.56</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(lb):</b>	
-Direct Costs	4.08	_____	0.14	_____
-Indirect Costs	3.75	_____	0.08	_____
-Total Costs	7.84	_____	0.21	_____

### 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 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

## Confection Sunflower

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	1720	_____	1200	_____
Market Price	0.177	_____	0.247	_____
<b>MARKET INCOME</b>	<b>304.44</b>	_____	<b>296.40</b>	_____
<b>DIRECT COSTS</b>				
-Seed	37.20	_____	55.00	_____
-Herbicides	27.70	_____	29.90	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	5.00**	_____	10.00**	_____
-Fertilizer	35.25	_____	21.24	_____
-Crop Insurance	12.00	_____	17.50	_____
-Fuel & Lubrication	16.84	_____	15.95	_____
-Repairs	20.24	_____	19.76	_____
-Drying	5.16	_____	3.60	_____
-Miscellaneous	16.00	_____	24.00	_____
-Operating Interest	4.74	_____	5.32	_____
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>180.13</b>	_____	<b>202.27</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	9.41	_____	9.10	_____
-Machinery Depreciation	26.50	_____	25.62	_____
-Machinery Investment	16.16	_____	15.70	_____
-Land Charge	90.00	_____	90.00	_____
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>142.07</b>	_____	<b>140.42</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>322.20</b>	_____	<b>342.69</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(17.76)</b>	_____	<b>(46.29)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(lb):</b>	
-Direct Costs	0.10	_____	0.17	_____
-Indirect Costs	0.08	_____	0.12	_____
-Total Costs	0.19	_____	0.29	_____

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	1920	_____	24	_____
Market Price	0.163	_____	9.30	_____
<b>MARKET INCOME</b>	<b>312.96</b>	_____	<b>223.20</b>	_____
<b>DIRECT COSTS</b>				
-Seed	56.50	_____	17.50	_____
-Herbicides	23.10	_____	24.70	_____
-Fungicides	0.00*	_____	0.00*	_____
-Insecticides	0.00	_____	0.00	_____
-Fertilizer	65.72	_____	26.95	_____
-Crop Insurance	10.50	_____	15.00	_____
-Fuel & Lubrication	15.04	_____	16.86	_____
-Repairs	19.30	_____	21.82	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	8.00	_____	1.50	_____
-Operating Interest	5.35	_____	3.36	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>203.51</b>	_____	<b>127.69</b>	_____
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.28	_____	8.73	_____
-Machinery Depreciation	23.24	_____	25.10	_____
-Machinery Investment	13.02	_____	14.93	_____
-Land Charge	90.00	_____	90.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>134.54</b>	_____	<b>138.76</b>	_____
<b>SUM OF ALL LISTED COSTS</b>	<b>338.05</b>	_____	<b>266.45</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(25.09)</b>	_____	<b>(43.25)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.11	_____	5.32	_____
-Indirect Costs	0.07	_____	5.78	_____
-Total Costs	0.18	_____	11.10	_____

Canola notes:

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

Flax notes:

\*Fungicide treatment for pasmo has shown good yield response.

## Field Peas

## Oats

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	40		107	
Market Price	5.70		2.33	
<b>MARKET INCOME</b>	<b>228.00</b>		<b>249.31</b>	
<b>DIRECT COSTS</b>				
-Seed	42.00		12.50	
-Herbicides	32.30		5.40	
-Fungicides	1.50		0.00	
-Insecticides	0.00		0.00	
-Fertilizer	6.59		64.50	
-Crop Insurance	10.00		18.00	
-Fuel & Lubrication	16.63		21.28	
-Repairs	21.79		23.24	
-Drying	0.00		0.00	
-Miscellaneous	6.00		8.00	
-Operating Interest	3.69		4.13	
	=====	=====	=====	=====
<b>SUM OF LISTED DIRECT COSTS</b>	<b>140.50</b>		<b>157.05</b>	
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.91		10.20	
-Machinery Depreciation	25.90		28.33	
-Machinery Investment	14.98		16.91	
-Land Charge	90.00		90.00	
	=====	=====	=====	=====
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>139.80</b>		<b>145.43</b>	
<b>SUM OF ALL LISTED COSTS</b>	<b>280.29</b>		<b>302.48</b>	
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>(52.29)</b>		<b>(53.17)</b>	
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(bu):</b>		<b>(bu):</b>	
-Direct Costs	3.51		1.47	
-Indirect Costs	3.50		1.36	
-Total Costs	7.01		2.83	



## Yellow Mustard

## Winter Wheat

	Per Acre	Your Figures	Per Acre	Your Figures
Market Yield	900	_____	55*	_____
Market Price	0.30	_____	4.35	_____
<b>MARKET INCOME</b>	<b>270.00</b>	_____	<b>239.25</b>	_____
<b>DIRECT COSTS</b>				
-Seed	25.20	_____	11.70	_____
-Herbicides	14.00	_____	24.50	_____
-Fungicides	0.00	_____	9.00	_____
-Insecticides	6.00*	_____	0.00	_____
-Fertilizer	21.63	_____	62.42	_____
-Crop Insurance	0.00**	_____	7.00	_____
-Fuel & Lubrication	13.93	_____	15.84	_____
-Repairs	18.69	_____	19.72	_____
-Drying	0.00	_____	0.00	_____
-Miscellaneous	1.50	_____	8.00	_____
-Operating Interest	2.73	_____	4.27	_____
<b>SUM OF LISTED DIRECT COSTS</b>	<b>103.67</b>	=====	<b>162.44</b>	=====
<b>INDIRECT (FIXED) COSTS</b>				
-Misc. Overhead	8.04	_____	8.58	_____
-Machinery Depreciation	21.56	_____	23.16	_____
-Machinery Investment	12.90	_____	13.36	_____
-Land Charge	90.00	_____	90.00	_____
<b>SUM OF LISTED INDIRECT COSTS</b>	<b>132.49</b>	=====	<b>135.10</b>	=====
<b>SUM OF ALL LISTED COSTS</b>	<b>236.16</b>	_____	<b>297.55</b>	_____
<b>RETURN TO LABOR &amp; MANAGEMENT</b>	<b>33.84</b>	_____	<b>(58.30)</b>	_____
<b>LISTED COSTS PER BUDGET UNIT</b>	<b>(lb):</b>		<b>(bu):</b>	
-Direct Costs	0.12	_____	2.95	_____
-Indirect Costs	0.15	_____	2.46	_____
-Total Costs	0.26	_____	5.41	_____

Yellow Mustard notes:

\*Insecticide seed treatment for flea beetles.

\*\*Crop insurance is not available in this region.

Winter Wheat notes:

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

## 2020 Machinery List

Machine	Purch. Price	Annual Use	Years to trade	Trade in	Deprec.	Invest.	Repairs	Ac/hr
FWA 150HP Tractor	140800	400hr	20	44054	12.09 /hr	10.40 /hr	13.91 /hr	
FWA 190HP Tractor	185100	500hr	15	53163	17.59 /hr	10.72 /hr	18.30 /hr	
4WD 370HP Tractor	164000	500hr	15	75814	25.09 /hr	15.29 /hr	14.91 /hr	
SP Combine (base unit)	300200	250hr	12	72486	75.90 /hr	33.54 /hr	47.31 /hr	
Tandem Truck (used)	40600	150hr	15	12900	12.31 /hr	8.03 /hr	8.33 /hr	
Semi & Trailer (used)	47600	150hr	10	13500	22.73 /hr	9.17 /hr	10.33 /hr	
Pick-up Truck	34200	300hr	10	7900	8.77 /hr	3.16 /hr	3.92 /hr	
Swather 30 ft	31600	1000ac	20	7495	1.20 /ac	0.88 /ac	0.51 /ac	13.1
Sprayer 90 ft	40800	5000ac	10	20293	0.41 /ac	0.28 /ac	0.52 /ac	42.5
Chisel Plow 38 ft	47100	3000ac	15	27515	0.43 /ac	0.56 /ac	1.04 /ac	19.6
Field Cultivator 48 ft	54400	3000ac	15	31786	0.50 /ac	0.65 /ac	0.96 /ac	24.7
Tandem Disk 28 ft	36100	800ac	20	10315	1.61 /ac	1.30 /ac	0.91 /ac	13.6
Heavy Harrow 70 ft	32600	2000ac	20	19004	0.34 /ac	0.58 /ac	0.36 /ac	39.7
Air Seeder 40 ft	186700	2400ac	10	95428	3.80 /ac	2.64 /ac	6.46 /ac	17.0
Planter 24-22	142200	1600ac	15	59127	3.46 /ac	2.83 /ac	5.36 /ac	15.6
Corn head 12R w/chopper	132000	1000ac	15	25273	7.12 /ac	3.54 /ac	2.79 /ac	7.5
Grain head w/pu	19400	800ac	20	1873	1.09 /ac	0.60 /ac	0.30 /ac	10.2
Grain str. cut 35 ft	31900	1000ac	15	6646	1.68 /ac	0.87 /ac	0.42 /ac	11.9
Head w/sunf pans	38400	600ac	20	4016	2.86 /ac	1.59 /ac	0.51 /ac	11.9
Flex head 35 ft	46600	1000ac	20	4442	2.10 /ac	1.15 /ac	0.62 /ac	11.9
Grain Cart	37900	100hr	20	6400	15.75 /hr	9.97 /hr	8.90 /hr	
Grain auger	14000	50hr	20	800	13.20 /hr	6.66 /hr	5.20 /hr	



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