Representative Economic Budget for Southern Nebraska Panhandle - 75 Head Cow Herd

Updated Dec. 2021

Background

In the Nebraska Panhandle, two representative size cow herds were identified by producers from their respective areas. In the southern panhandle area, a typical cow herd size is 75 head of cows. In the northern panhandle, 400 head of cows is the norm for a herd size. The 75-cow herd enterprise in the southern panhandle area, would provide a small portion of a farm's overall revenue. Fifty to sixty percent of farms in this area are diversified with enterprises including hay, dry edible beans, corn, and sugar beets. Many producers also count on off-farm jobs for income.

This budget should only be used as a guide. Individual producers can utilize the cow calf budget Excel template and enter information that reflects their operation.

It is important to note that feed and hay costs on owned ground, along with pasture and stalk rent expenses are considered separate enterprises. Therefore in this representative budget, feed, hay, pasture, and stalks are included cash feed expenses, valued at current market value. Individual producers may enter an opportunity cost for their land use for the cow calf enterprise in lieu of cash rental expenses in their budgets.

Livestock Management Practices

Typical calving time for the 75 cow herd in the southern panhandle area is in March. Weaning rates range from 80 to 85% per exposed cow with 15% of cows culled each year. Producers reported a mix of practices in the area, either keeping their own heifers as replacements or buying bred heifers for replacements. The 75 cow herd budget representative of this size operation in the panhandle, figures raising replacements versus buying.

Chart 1: Cow-calf production flowchart provides production numbers.

Weaning weights for calves range from 550 to 600#. Approximately 75% of calves are sold mid-October to mid-November right after weaning. The other 25% of calves are backgrounded for 60 days in a dry lot while being fed hay, silage, corn, and sugar beet pulp. During this time, the calves will gain 100 to 150 pounds before they are sold.

In this area of the state, approximately 50% of pasture utilized is on owned ground and the other 50% of pasture utilized is rented. The representative budget includes a market rate for pasture and stalks as a cash feed expense. Cattle are on pasture from mid-May to the end of October. Current pasture rental rates in the area are \$40 to \$45 per pair per month. Fifteen to twenty acres per cow calf is needed for the 5 months they are on pasture. Four acres of corn stalks per cow for the winter is a general rule of thumb for around sixty cents per head per day. Cattle are typically on crop residue or stalk ground from November to January, with hay primarily fed the other three months. Bulls follow a similar feed program to that of the cows, however they are kept separate for part of the year. Raised feed and hay are included in the representative budget as cash feed expenses, valued at a current market rate since hay and crop production are thought of as separate enterprises from the livestock operation.

Machinery, Equipment and Facilities Basic equipment utilized for the cow-calf enterprise in the southern panhandle would typically include an ATV, pickup, tractor, stock trailer, feed wagon, portable chute, and panels. Facilities often include a barn and corrals.

The value of the machinery and equipment that pertains to use in the cow calf operation is shown in this budget. For example if the ATV is used for other enterprises on the ranch, with 40% use for the cow calf operation, 40% of its current and future value should be entered in to the budget program. If the stock trailer is used 100% of the time in the livestock enterprise, 100% of its current and future value should be included in machinery and equipment or on a separate line for livestock equipment. Annual repair expenses for fixed assets are shown in the budget as fixed cash costs. Depreciation and opportunity costs of ownership are noted in the budget as non-cash costs.

Non-Feed Input Costs

Non-feed input costs can be entered into the budget on a "per animal" or a whole herd basis. In this representative budget, these costs were entered on a per animal basis and include labor, fuel, veterinary and medical cost, and marketing costs. Labor, fuel, and veterinary and medical costs are allocated to each animal category based on net increase in value during the production year. Marketing costs are broken down by each animal category of the herd and allocated accordingly. For example, cull bull marketing of \$35 per animal is included on the bull budget page and the system budget which is a summary of all projected revenue and expenses at the end of the budget report. The cost of direct marketing and the costs per head to sell thru a nearby sale barn can vary tremendously. Marketing expense includes the sales commission, transportation and other costs to market. In this budget, both a commission and charge for hauling the cattle to sale are figured into marketing expense.

Other Depreciation, Interest and Overhead Costs

Depreciation for bulls is figured in the difference of cost of purchased bulls to their sale value when sold. These figures are included in the bull budget page and are carried over into the total cow calf system budget page as income when sold and expense when purchased. Depreciation expense for tax purposes would be handled differently and in consultation with a tax accountant. There is no depreciation expense shown for the cows as they are typically replaced by raised heifers. Opportunity interest of 3% is figured on the value of investment total in the livestock herd. This is an economic cost reflecting what rate of return could be earned if the herd was sold and the money invested in its most profitable alternative use.

Overhead expenses entered into the budget the cow calf enterprise portion of the farm's annual insurance premium and professional fees. Real estate value and taxes are left blank in this example because, as stated previously, rental costs are paid for all hay, stalks and pasture. Therefore, this budget is making the assumption that no ground utilized for the cow calf operation is owned by the cow calf enterprise. An annual management charge and other expenses that pertain to the cow calf herd may be entered but are left blank in this representative budget.

Prepared by:

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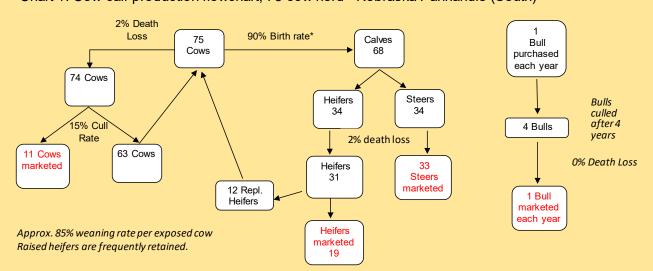


Chart 1: Cow-calf production flowchart, 75 cow herd - Nebraska Panhandle (South)

75 Head Cow Herd Livestock Budget Worksheet pages attached include:

Budget Input sheets Bull budget Replacement budget Breeding herd cash budget Backgrounded calf budgets (shows backgrounding cattle revenue and costs) Cow-calf System Budget report (summarizes all budget information)



Cow Herd System Budget

Glennis McClure, Extension Educator - Farm & Ranch Management Analyst

This budgeting workbook is designed for the medium and small sized operator. It includes spreadsheets for analyzing the components of a beef production system separately but provides a combined analysis as well. This template provides an example of a 75 cow herd based in the southern part of the Nebraska panhandle.

Budget template designed by Roger Wilson, retired Farm & Ranch Management Analyst.



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Budget Inputs

75 cow herd - Nebraska Panhandle, December 2021

Bre	eding Herd			
	Herd size	It is assumed that herd size remains stationary so	75	Cows
	Average Cow Value	replacements will equal cow culls and cow deaths. If too	1,300	\$ / head
	Cows Culled per Year	few replacements are purchased, the worksheet	11	Cows
s	Cow Deaths per year	automatically retains heifers.	1	head
Females	Number of Replacements Nee	ded	12	
Ë	Estimated Weaning Rate		90	percent
ъ	Extra Heifers Retained for Bree	eding that Will Not Be Used as Replacement	s 2	head
bu	Culled Replacement Heifer We	eight When Sold	900	pounds
edi	Culled Replacement Heifer Se	Iling Price	135	\$ / cwt
Breeding	Cost of Marketing Culled Repla	acement Heifers		\$ / head
	Replacement Females Purcha	sed (<=12	2)	head
	Replacement Female Cost (if a	applicable)		\$ / head
	Cow Cull Weight		1,350	pounds
	Non-Fed Cull Cow Price		62	\$ / cwt
	Bulls Needed		4	Bull(s)
	Bull Purchase Price		3,000	\$ / head
Bulls	Bull use (years)	(<1)	/	years
Βſ	Bull Death Loss Rate		0%	
	Cull Bull Price		90	\$ / cwt
	Cull Bull Weight		1,700	pounds
	Calves Weaned	(<=68		head/year
es	Steer Weaning Weight		575	
Calves	Heifer Weaning Weight		550	pounds
Ü	Weaned Steer Price	(>=10	· ·	\$ / cwt
	Weaned Heifer Price	(>=10	0) 165	\$ / cwt

Bac	Backgrounded Calf							
	Days Fed		days					
	Death Loss (0-100)		percent					
	Retained after Weaning (<=34)		head					
Steel	End Weight		pounds					
SI	Market Price (>=10)		\$ per cwt					
rs	Retained after Weaning (<=20)		head					
Heifer	End Weight		pounds					
Не	Market Price (>=10)		\$ per cwt					

Sto	cker	
	Days Fed	days
	Death Loss (0-100)	percent
rs	Retained for Grazing (<=0)	head
Steers	End Weight	pounds
st	Market Price (>=10)	\$ per cwt
rs	Retained for Grazing (<=0)	head
Heifer	End Weight	pounds
Нe	Market Price (>=10)	\$ per cwt

Fee	llot	
	Days Fed	days
	Death Loss (0-100)	percent
rs	Placed on Feed (<=0)	head
Steers	End Weight	pounds
SI	Market Price (>=10)	\$ per cwt
rs	Placed on Feed (<=0)	head
Heifers	End Weight	pounds
Не	Market Price (>=10)	\$ per cwt

Fed Cull Cow	
Days Fed	days

Death Loss	(0-100)	0	percent
Placed on Feed	(<=11)		head
End Weight			pounds
Market Price	(>=10)		\$ per cwt

Feed					
			Fed Unit		
	Price per Unit	Priced Unit	(tons, lbs.	Fed Unit per	
Name	Purchased	(tons, lbs. etc)	etc)	Priced Unit	As Fed Price
Summer Pasture	1.50	day	day	1	1.50
Corn Stalks/Winter Range-Pasture	0.85	day	day	1	0.85
Нау	150.00	ton	lbs	2000	0.08
DDG Cubes	350.00	ton	lbs	2000	0.18
Salt and Mineral	960.00	ton	ounce	32000	0.03
Corn	5.75	bu	lbs	56	0.10

Non-Feed Input Costs		Allocation Percentage					
Name	Cost per Year	Is This Cost Per Animal or for All Animals?	Breeding Herd	Wintered Calf (Optional)	Stocker (Optional)	Feedlot (Optional)	Fed Cull Cow (Optional)
Labor	125.00	per animal					
Fuel	25.00	per animal					
Veterinary and Medical	35.00	per animal					
Cull Cow Marketing	35.00	per animal					
Cull Bull Marketing	35.00	per animal					
Cull Replacement Marketing		per animal					
Weaned Calf Marketing	20.00	per animal					
Backgrounded Calf Marketing	20.00	per animal					
Stocker Marketing	-	per animal					
Feedlot Marketing	-	per animal					

Depreciable Input Costs					Allocation Percentage			
Name	Current Value	Future Value	Future Value Horizon	Annual Repairs	Breeding Herd (Optional)	Weaned Calf Wintering (Optional)	Stocker (Optional)	Feedlot (Optional)
Barn	20,000	10,000	20	1,000				
Machinery & equipment	70,000	20,000	10	2,000				
Livestock equipment	20,000	5,000	7	1,000				
Vehicles	20,000	5,000	7	600				

Interest	
Operations Interest Rate	6%
Opportunity Rate	3%

Overhead Costs				Allocation Percentage			
	Amount		Breeding Herd (Optional)	Weaned Calf Wintering (Optional)	Stocker (Optional)	Feedlot (Optional)	Fed Cull Cow (Optional)
Real Estate Value*							
Real Estate Tax	300	per year					
Annual Insurance Premium		per year					
Professional Fees	750	per year					
Annual Management Charge		per year					
Other	1,500	per year					

* If cattle are grazed on owned land, either the value of the land and associated taxes or the grazing fees for that land should be included so costs are not double counted. If grazing fees are used to calculate costs when land is owned, only the cost of and taxes on non-grazing real estate should be included as an overhead cost. A calving shed is an example of non-grazing real estate.

Bull Budget	(4 Bulls)			
Income				Herd Total
Cull Bull Sales	Amount 1.00 head @	<u>Weight</u> \$ 1,700.00 \$	<u>Price</u> 90.00	<u>Total</u> 1,530
			Gross Income	1,530

Variable Costs					Herd Total
Breeding Costs	Number		Price		<u>Total</u>
Bulls	1.00		\$ 3,000	per head	3,000
	Amount		Per Animal		
Bull Feed	<u>per Year</u>		<u>or Total</u>	<u>Price</u>	<u>Total</u>
Summer Pasture	165	day	per animal	@ 1.50 per day	990
Corn Stalks/Winter Range-Pastu	120	day	per animal	@ 0.85 per day	408
Salt and Mineral	1095	ounce	per animal	@ 0.03 per ounce	131
Нау	3000	lbs	per animal	@ 0.08 per lbs	900
			per animal		
				Total Feed	2,429
Other Variables			Allocation		Total
Cull Bull Marketing		35.00	per animal		35
On another a last and at	Operations in	nterest rate t	times feed and	l other variable	70
Operations Interest	expenses ex	cept market	ing divided by	two.	73
				Total Non-feed	108
				Total Variable Costs	5,537
				Net Expense	4,007

Replacement Budget	14 Head*						
Feed Costs					Herd Total		
	Amount		Per Animal				
	<u>per Year</u>		<u>or Total</u>	Price			
Summer Pasture	150	day	per animal	@ 1.50 per day	3,150		
Corn Stalks/Winter Range-Pastu	135	day	per animal	@ 0.85 per day	1,607		
Нау	1400	lbs	per animal	@ 0.08 per lbs	1,470		
DDG Cubes	350	lbs	per animal	@ 0.18 per lbs	858		
salt and mineral	1095	ounce	per animal	@ 0.03 per ounce	460		
				Total Feed Costs	7,544		

Breeding Herd Cash Budget (75 Cows)

Revenue				Herd Total	Per Cow	Per Calf
	Number	Weight	Price	Total		
Weaned Steer Value	34	575	168.00 per cwt	32,844		
Weaned Heifer Value	20	550	165.00 per cwt	18,150		
Cull Cow Sales	11	1,350	62.00 per cwt	9,207		
Replacements Culled	2	900	135.00 per cwt	2,430		
			Gross Income	62,631	835.08	1159.83

Variable Cash Costs					Herd I otal	Per Cow	Per Calt
Breeding Costs	Number		Price		Total	Total	Total
Bulls	(T	his amount	is the "Net Exp	enses" from the "Bulls" tab)	4,007	53.43	74.21
Replacements Purchased				\$ per head			
				Animal Purchases	4,007	53.43	74.21
	Amount		Per Animal				
Cow Feed	<u>per Year</u>		<u>or Total</u>	Price	Total	Total	Total
Summer Pasture	165	day	per animal	@ 1.50 per day	18,563	247.50	343.75
Salt and Mineral	1095	ounce	per animal	@ 0.03 per ounce	2,464	32.85	45.63
Нау	3000	lbs	per animal	@ 0.08 per lbs	16,875	225.00	312.50
Corn Stalks/Winter Range-Pasture	120	day	per animal	@ 0.85 per day	7,650	102.00	141.67
			per animal				
Replacement Heifer Feed		(From Re	placement Sp	readsheet)	7,544	100.59	139.70
				Total Feed	53,095	707.94	983.24
Other Variable	Amount		Unit	Allocation	Total	Total	Total
Labor	125	per	animal	100%	9,375	125.00	173.61
Fuel	25	per	animal	100%	1,875	25.00	34.72
Veterinary and Medical	35	per	animal	100%	2,625	35.00	48.61
Cull Cow Marketing	35	per	animal		385	5.13	7.13
Cull Replacement Marketing	-	per	animal				
Weaned Calf Marketing	20	per	animal		1,080	14.40	20.00
Operations Interest		•		ate times feed and arketing divided by two.	2,192	29.23	39.86
				Total Non-feed	17,532	233.76	323.93
			Tota	al Variable Cash Costs	74,635	995.13	1,381.38

Fixed Cash Costs			Herd Total	Per Cow	Per Calf
Depreciables Input Costs	Repairs	Allocation	Total	Total	Total
Barn	1,000	100%	1,000	13.33	18.52
Machinery & equipment	2,000	100%	2,000	26.67	37.04
Livestock equipment	1,000	100%	1,000	13.33	18.52
Vehicles	600	100%	600	8.00	11.11
		Cash Ownership	4,600	61.33	85.19
Overhead and Management	Amount	Allocation	Total	Total	Total
Real Estate Tax	300	100%	300	4.00	5.56
Annual Insurance Premium	1,500	100%	1,500	20.00	27.78
Professional Fees	750	100%	750	10.00	13.89
Annual Management Charge	-				
Other	1,500	100%	1,500	20.00	27.78
		Total Overhead	4,050	54.00	75.00
		Total Fixed Cash Costs	8,650	115.33	160.19

Total Cash Costs

Net Cash Income				(20,654)	(275.38)	(381.73)
Non-Cash Costs				Herd Total	Per Cow	Per Calf
		Oppor-				
Depreciables Input Costs	Depreciation	tunity	Allocation	Total	Total	Total
Barn	500	600	100%	1,100	14.67	20.37
Machinery & equipment	5,000	2,100	100%	7,100	94.67	131.48
Livestock equipment	2,143	600	100%	2,743	36.57	50.79
Vehicles	2,143	600	100%	2,743	36.57	50.79
Opportunity	Amount		Allocation			
Real Estate			100%			
Livestock	3,578		100%	3,578	47.71	66.26

83,285

1,110.46

1,541.57

	Total Non-Cash Costs	17,264	230.18	319.70
			1	
Total Cash and Non-Cash		Herd Total	Per Cow	Per Calf
	Total Costs	100,548	1,340.64	1,861.27
	Total Net Income	(37,917)	(505.56)	(701.43)

Backgrounded Calf Bud	dget			Days	1	1
Revenue					Herd Total	Per Calf Sold
a /	Number	Weight	Price		Total	Total
Steers Heifers				\$ / cwt \$ / cwt		
				φ, out		
				Gross Revenue		
Variable Cash Costs					Herd Total	Per Calf Sold
Valiable Casil Costs	Number	Weight	Price		Total	
Steer Calves Retained		575		\$ / cwt		
Heifer Calves Retained		550	165.00	\$ / cwt Animals Purchased		
	Amount Fed per		Per Animal			
Feed	Year		or Total	Price	Total	Total
			per animal			
			per animal per animal			
			per animal			
				Total Feed		
		• •	. .			
<u>NonFeed</u> Labor		<u>Amount</u> 125	<u>Basis</u> per animal	Allocation	<u>Total</u>	<u>Total</u>
Fuel		25	per animal			
Veterinary and Medical		35 20	per animal			
Backgrounded Calf Marketing	Calculation		per animal s interest rate	times feed and othe	-	
Operations Interest				divided by two.		
			T -4-11	Total Non-feed		
			Total	Variable Cash Costs		
Fixed Cash Costs					Herd Total	Per Calf Sold
Depreciables Input Costs		Repairs		Allocation	Total	Total
Machinery & equipment		2,000				
Livestock equipment Vehicles		1,000 600				
venicies		000				
		Та	tal Cash Cos	sts on Depreciables		
 .						
Overhead and Management Real Estate Tax		Amount 300		Allocation	<u>Total</u>	<u>Total</u>
Annual Insurance Premium		1,500				
Professional Fees		750				
Annual Management Charge Other		1,500				
				nead and Ownership		
			Tot	al Fixed Cash Costs	;	
				Total Cash Costs	5	
				Net Cash Income		
Non-Cash Costs					Herd Total	Per Calf Sold
Depreciable Assets		epreciation	Oppor- tunity	Allocation	Total	Total
Machinery & equipment		5,000	2,100	<u>- inocution</u>	<u>10tal</u>	<u>10(di</u>
Livestock equipment		2,143	600			
Vehicles		2,143	600			
Real Estate			-	otal Non-Cash Costs		
Total Cash and Non-Cash	ו ז				Herd Total	Per Calf Sold
				Total Costs		
				Net Total Income	•	

System Budget

Revenue				Herd Total
	Number	<u>Weight</u>	<u>Price</u>	Total
Weaned Steers	34	575	168 \$ / cwt	32,844
Weaned Heifers	20	550	165 \$ / cwt	18,150
Wintered Steers				
Wintered Heifers				
Stocker Steers				
Stocker Heifers				
Fed Steers				
Fed Heifers				
Cull Cow Sales	11	1,350	62 \$ / cwt	9,207
Fed Cull Cow Sales				
Cull Bull Sales	1	1,700	90 \$ / cwt	1,530
Cull Replacement Sales	2	900	135 \$ / cwt	2,430

Gross Income 64,161

Variable Costs				Herd Total
Animal Purchases	<u>Number</u>	Price		<u>Total</u>
Replacement Females Bulls	1.0	3 000	\$ per head \$ per head	3,000
Dulls	1.0	3,000	Total Animals Purchased	3,000
			Total Animals Furchaseu	3,000
Feed	<u>Amount</u>		Price	Total
Summer Pasture	15,135.00	day @	1.50 per day	22,703
Corn Stalks/Winter Range-Pastu	11,370.00	day @	0.85 per day	9,665
Нау	128.30	ton @	150.00 per ton	19,245
DDG Cubes	2.45	ton @	350.00 per ton	858
Salt and Mineral	3.18	ton @	960.00 per ton	3,055
Corn		bu @	5.75 per bu	
			Total Feed	55,525
Other Variable				Total
Labor				9,375
Fuel				1,875
Veterinary and Medical				2,625
Cull Cow Marketing				385
Cull Bull Marketing				35
Cull Replacement Marketing Weaned Calf Marketing				1,080
Backgrounded Calf Marketing				1,000
Stocker Marketing				
Feedlot Marketing				
5				

1	1	1
Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.	2,265
	Total Other	17,640
	Total Variable Costs	76,165
Fixed Cash Costs	Densite	Herd Total
Depreciables Input Costs Barn	<u>Repairs</u> 1000	<u>Total</u> 1,000
Machinery & equipment	2000	2,000
Livestock equipment	1000	1,000
Vehicles	600	600
	Total Ownership	4 600
	Total Ownership	4,600
Overhead and Management		<u>Total</u>
Real Estate Tax		300
Insurance Professional Fees		1,500 750
Management		750
Other		1,500
	Total Overhead	4,050
	Total Fixed Cash Costs	8,650
	Total Cash Costs	84,815
	Net Cash Income	(20,654)
Non-Cash Costs		Herd Total
Depreciables Costs	Depre- <u>ciation</u> <u>Opportunity</u>	Total
Barn Machinery & equipment	500 600 5,000 2,100	1,100 7,100
Livestock equipment	2,143 600	2,743
Vehicles	2,143 600	2,743
Opportunity Deal Estate Opportunity	Investment rate times real estate value	
Real Estate Opportunity Livestock	Investment rate times real estate value Investment rate times livestock value	3,578
	Total Non-Cash Costs	17,264
Total Cash and Non-Cash	۱	Herd Total
	Total Costs	102,078

Net Total Income (37,917)