

Enterprise Analysis; Tool for Profitability Analysis

I have been asked to briefly discuss the subject of enterprise analysis - to explain what it is, how it works, and how it can be used in making key management decisions. Enterprise analysis involves the examination of the total costs and returns items associated with each basic type of livestock or crop grown. The purposes of such an examination are: 1) to determine the relative profitability of the various crop and livestock presently being grown (or contemplated to be grown); 2) evaluate problem areas associated with the costs of production and marketing and with present and projected prices of inputs and products; and 3) provide a logical framework within which rational farm business decisions can be made.

Enterprise analysis is one of the more useful aspects of a good total record-keeping program. Although estimated or average regional costs can be used when assisting a producer to analyze his particular farm enterprises, these are a poor substitute for the producer's actual cost records.

Perhaps the best way to get a "feel" for enterprise analysis is to "do" it. Therefore, I suggest that the remainder of the hour be spent in examining and working through the attached enterprise analysis forms. These are forms which I have developed over time and find quite useful for obtaining cost of production information. By completing one

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of these for each actual or potential livestock (or crop) enterprise on a farm, an information base can be accumulated which will provide considerable information for making improved farm business--and production management--decision making. A set of blank forms and a set of forms completed for a 200-cow feeder calf operation are included.

Carefully completed enterprise analyses are also very useful in working with the farmer's banker. The information in Tables 1 and 7 are particularly appropriate.

TABLE 1
ESTIMATED COSTS AND RETURNS
COW-CALF ENTERPRISE - SALMON, IDAHO - 200 COWS (DEBT FREE)

| COSTS AND RETURNS ITEMS | TOTAL | PER COW (200 HEAD) | YOUR ESTIMATE | |
|--|----------|-----------------------|---------------|---------|
| | | | TOTAL | PER COW |
| <u>INCOME</u> | | | | |
| Steer Calves (85 x 410# x \$.42) | \$14,637 | \$ 73.19 | | |
| Heifer Calves (45 x 380# x \$.35) | 5,985 | 29.93 | | |
| Replacement Heifers (5 x 750# x \$.35) | 1,313 | 6.57 | | |
| Cows (34 x 1000# x \$.22) | 7,480 | 37.40 | | |
| Bulls (3 x 1700# x \$.28) | 1,428 | 7.14 | | |
| | | | | |
| TOTAL CASH INCOME (Table 3) | \$30,843 | \$154.23 | | |
| <u>CASH OPERATING COSTS</u> | | | | |
| Feed purchased (Table 4) | \$ 1,970 | \$ 9.85 | | |
| Medical Supplies & Veterinary Services | 1,000 | 5.00 | | |
| Repair & Maintenance | | | | |
| Fencing - charged to crops | --- | --- | | |
| Buildings | 200 | 1.00 | | |
| Corrals, Feeders & Work area | 400 | 2.00 | | |
| Machinery & Equipment | 400 | 2.00 | | |
| Fuel & Oil | 300 | 1.50 | | |
| Hired Labor (none) | --- | --- | | |
| Bulls purchased, 3 per year | 2,100 | 10.50 | | |
| Taxes | 650 | 3.25 | | |
| Insurance | 300 | 1.50 | | |
| License (50% of pickup) | 8 | .04 | | |
| Interest on Borrowed Operating Capital (\$7,404 at 9% for 6 months) | 333 | 1.66 | | |
| Interest on Investment Capital (debt free) | --- | --- | | |
| Miscellaneous Overhead (accounting, utilities, dues, subscriptions & business travel) | 75 | .38 | | |
| | | | | |
| TOTAL CASH OPERATING COSTS | \$ 7,736 | \$ 38.68 | | |
| <u>NON-CASH OPERATING COSTS</u> | | | | |
| Feed - Home Grown (Table 4) | \$22,355 | \$111.78 | | |
| Operator's Labor (2,500 hours @ \$2/hr) | 5,000 | 25.00 | | |
| | | | | |
| TOTAL NON-CASH OPERATING COSTS | \$27,355 | \$136.78 | | |
| TOTAL OPERATING COSTS (CASH + NON-CASH) | 35,091 | 175.46 | | |
| RETURN ABOVE OPERATING COSTS (loss) | (4,248) | (21.24) | | |
| Less Depreciation (Table 5) | -781 | -3.90 | | |
| RETURN TO TOTAL CAPITAL INVESTMENT & MANAGEMENT | (5,029) | (25.14) | | |
| % RETURN TO TOTAL CAPITAL INVESTMENT & MANAGEMENT | | -4.64% | | |

TABLE 2
CAPITAL INVESTMENT SUMMARY

| ASSETS | | TOTAL | PER COW (200 HEAD) | YOUR ESTIMATE | |
|--|------------------------|------------------|-----------------------|---------------|---------|
| | | | | TOTAL | PER COW |
| Cash | (Average Reserve) | \$ 3,000 | \$ 15.00 | | |
| Land | (Table 5) ¹ | 30,000 | 150.00 | | |
| Livestock | (Table 3) | 68,225 | 341.12 | | |
| Buildings & Improvements | (Table 5) | 4,900 | 24.50 | | |
| Machinery & Equipment | (Table 5) | 2,375 | 11.88 | | |
| TOTAL INVESTMENT DUE TO COW-CALF ENTERPRISE | | \$108,500 | \$542.50 | | |

¹Does not include the value of hay or range land which was considered as separate enterprises with the hay and aftermath grazing and the range grazing being charged to the beef enterprise at current local rates. Investment in meadow land totaled \$250,000 or \$1,250/head and investment in owned dry range added another \$6,250 or \$31.25/head to total ranch investment.

TABLE 3
LIVESTOCK INVENTORY, PRODUCTION AND SALES

| Kind of Livestock | Beginning of Year | | To Be Purchased | | Head Born | Head Died | Sales | | | | |
|---|-------------------|----------------|-----------------|------|-----------|-----------|-------|------|-----------------|-------|----------------|
| | Head | Value Per Head | Value | Head | | | Value | Head | Weight Per Head | Price | Total Receipts |
| Cows | 165 | \$275 | \$45,375 | | | | 1 | 34 | 1,000 | \$.22 | \$ 7,480 |
| 1st calf heifers (long yearlings to first calve 3/1976) | 35 | 275 | 9,625 | | | | | | | | |
| Replacement Heifers (short yearlings) | 40 | 231 | 9,200 | | | | | 5 | 750 | .35 | 1,313 |
| Heifer Calves | | | | | 94 | 9 | | 45 | 380 | .35 | 5,985 |
| Steer Calves | | | | | 94 | 9 | | 85 | 410 | .42 | 14,637 |
| Bulls | 7 | 575 | 4,025 | 3 | \$2,100 | | | 3 | 1,700 | .28 | 1,428 |
| TOTAL | 247 | xxx | \$68,225 | 3 | \$2,100 | 188 | 19 | 172 | xxx | xxx | \$30,843 |

TABLE 4
FEED REQUIREMENTS AND COSTS

| FEEDS | LIVESTOCK | | REQUIREMENTS | | | | SOURCE | | | | | |
|--------------------------------------|--------------------|-------------|--------------------------|-------------------------|---------------------------------|------------------|------------|----------------|-------------|-----------|--------------------|------------|
| | Kind of ANIMALS | No. of HEAD | Length of Feeding Period | Amount PER HEAD Per Day | Amount PER HEAD for Feed Period | TOTAL (Quantity) | HOME GROWN | | | PURCHASED | | |
| | | | | | | | Quantity | Value per Unit | TOTAL VALUE | Quantity | Price per Unit | TOTAL COST |
| Alfalfa Grass Hay (150 tons) | Cows | 165 | 120 days | 9.8# | 1,176.5# | 97.0 tons | | | | | | |
| | 1st Calf Heifers | 35 | 120 days | 9.8# | 1,176.5# | 20.6 tons | 150 tons | \$ 50 | \$7,500 | | | |
| | Replace. Heifers | 45 | 180 days | 6.5# | 1,176.5# | 26.4 tons | | | | | | |
| | Bulls ¹ | 7 | 120 days | 14.0# | 1,680.7# | 6.0 tons | | | | | | |
| | | | | | | | | | | | | |
| Native Grass Hay (150 tons) | Cows | 165 | 120 days | 9.8# | 1,176.5# | 97.0 tons | | | | | | |
| | 1st Calf Heifers | 35 | 120 days | 9.8# | 1,176.5# | 20.6 tons | 150 tons | 40 | 6,000 | | | |
| | Replace. Heifers | 45 | 180 days | 6.5# | 1,176.5# | 26.4 tons | | | | | | |
| | Bulls | 7 | 120 days | 14.0# | 1,680.7# | 6.0 tons | | | | | | |
| | | | | | | | | | | | | |
| Oat Straw (14 tons) | Cows | 165 | 120 days | 1.3# | 156.0# | 12.9 tons | 14 tons | 20 | 280 | | | |
| | Bulls | 7 | 120 days | 2.7# | 322.8# | 1.1 tons | | | | | | |
| Oats (18 tons) | 1st Calf Heifers | 35 | 150 days | 3.0# | 450.0# | 7.8 tons | 18 tons | 104 | 1,872 | | | |
| | Replace. Heifers | 45 | 150 days | 3.0# | 450.0# | 10.2 tons | | | | | | |
| Salt & Minerals | All stock | all | | | | 7.0 tons | | | | 7.0 tons | \$ 42 ² | \$ 294 |
| Protein Supplement (Cottonseed Meal) | 1st Calf Heifers | 35 | 120 days | 1.0# | 120.0# | 2.1 tons | | | | 4.8 tons | 160 | 768 |
| | Replace. Heifers | 45 | 120 days | 1.0# | 120.0# | 2.7 tons | | | | | | |
| Range (BLM & Forest) | Cows | 165 | 150 days | 1.0 AUM/mo | 5.0 AUM | 825 AUM | | | | 825 AUM | 110/AUM | 908 |
| Stubble, Meadow & Owned Dry | Cows | 165 | 90 days | 1.0 AUM/mo | 3.0 AUM | 495 AUM | 495 AUM | 6.30/AUM | 3,218 | | | |
| | Bulls | 7 | 240 days | 1.2 AUM/mo | 9.6 AUM | 67 AUM | 67 AUM | 6.50/AUM | 436 | | | |
| Range Grazing | 1st Calf Heifers | 35 | 240 days | 1.0 AUM/mo | 8.0 AUM | 280 AUM | 280 AUM | 6.50/AUM | 1,820 | | | |
| | Replace. Heifers | 45 | 180 days | 0.7 AUM/mo | 4.2 AUM | 189 AUM | 189 AUM | 6.50/AUM | 1,229 | | | |

TOTAL VALUE OF HOME GROWN FEEDS (EXCEPT RANGE) \$22,355

TOTAL COST OF PURCHASED FEEDS \$1,970

¹7 bulls wintered and 3 purchased in the spring.

²½ block salt and ½ iodized free salt.

TABLE 5
CAPITAL INVESTMENT
Land; Buildings & Improvements; Machinery & Equipment

| Column # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|-----------------------|------------------|-------------------------------|---|--|---------------------------|--|---|---|
| ITEM | Replace- ment Cost | Salvage Value | Average Value ¹ | Percent Due to Cow-Calf Enterprise | Average Investment Due to Enterprise ² | Useful Life (years) | Annual Cost | | |
| | | | | | | | Depreciation Straight Line ³ | Interest on Investment ⁴ | |
| <u>Machinery & Equipment:</u> | | | | | | | | | |
| Tractor & Loader (used) | \$3,000 | \$200 | \$ 1,600 | 0% | --- | 10 | | | |
| Tractor (used) | 2,000 | 200 | 1,100 | 0% | --- | 10 | | | |
| Pickup 3/4 Ton 4 wd (used) | 3,600 | 200 | 1,900 | 50% | \$ 950 | 15 | \$113 | \$ 76 | |
| Baler (used) | 4,000 | 500 | 2,250 | 0% | --- | 5 | --- | --- | |
| Bale Wagon (used) | 2,500 | 100 | --- | 0% | --- | 10 | --- | --- | |
| Gooseneck Trailer (used) | 2,500 | 100 | 1,300 | 100% | 1,300 | 15 | 160 | 104 | |
| Swather - Pull Type | 4,500 | 200 | 2,350 | 0% | --- | 10 | --- | --- | |
| Postpounder (used) | 500 | 0 | 500 | 0% | --- | 20 | --- | --- | |
| Miscellaneous | 500 | 0 | 250 | 50% | 125 | 20 | 13 | 10 | |
| Sub-Total | | | | | \$ 2,375 | | \$286 | \$ 190 | |
| <u>Buildings & Improvements:</u> | | | | | | | | | |
| Calving Barn | 5,000 | 0 | 2,500 | 100% | 2,500 | 25 | 200 | 200 | |
| Corrals & Chute | 3,000 | 0 | 1,500 | 100% | 1,500 | 15 | 200 | 120 | |
| Feeding Equipment | 1,200 | 0 | 600 | 100% | 600 | 15 | 80 | 48 | |
| Machinery shed, shop, tools | 6,000 | 0 | 3,000 | 10% | 300 | 40 | 15 | 24 | |
| Sub-Total | | | | | \$ 4,900 | | \$ 495 | \$ 392 | |
| <u>Land:</u> | | | | | | | | | |
| Dry Range 250 acres @ \$25/acre | | | 6,250 | 0% | | | | | |
| Native Wet Pasture 100 acres @ \$300/acre | | | 30,000 | 100% | 30,000 | | | 2,400 | |
| Native Hay Land 100 acres @ \$1500/acre | | | 150,000 | 0% | | | | | |
| Alfalfa Grass Hay Land 50 acres @ \$2000/acre | | | 100,000 | 0% | | | | | |
| Sub-Total | | | | | \$30,000 | | | \$2,400 | |
| TOTAL | | | | | \$37,275 | | \$ 781 | \$2,982 | |
| PER COW (200 HEAD) | | | | | \$186.38 | | \$ 3.90 | \$14.91 | |

¹(Col 2 + Col 3)/2

²Col 4 x Col 5

³[(Col 2 - Col 3) x Col 5]/Col 7

⁴.08 x Col 6

TABLE 7
INCOME SUMMARY

| COSTS AND RETURNS ITEMS | TOTAL | PER COW (200 HEAD) | YOUR ESTIMATE | |
|--|------------|-----------------------|---------------|---------|
| | | | TOTAL | PER COW |
| TOTAL CASH INCOME (Table 1) | \$30,843 | \$154.23 | | |
| TOTAL CASH OPERATING COSTS (Table 1) | \$ 7,736 | \$ 38.68 | | |
| NON-CASH COSTS | | | | |
| Feed - home grown (Table 4) | \$22,355 | \$111.78 | | |
| Operator's Labor (hours @ /hr) | \$ 5,000 | \$ 25.00 | | |
| SUB-TOTAL NON-CASH OPERATING COSTS (Table 1) | \$27,355 | \$136.78 | | |
| Depreciation | | | | |
| Machinery & Equipment (Table 5) | \$ 286 | \$ 1.43 | | |
| Buildings & Improvements (Table 5) | 495 | 2.47 | | |
| Sub-Total Depreciation | \$ 781 | \$ 3.90 | | |
| Interest on Investment at _% | | | | |
| Machinery & Equipment (Table 5) | \$ 190 | \$.95 | | |
| Buildings & Improvements (Table 5) | 392 | 1.96 | | |
| Livestock (Table 3) | 6,140 | 30.70 | | |
| Land (Table 5) | 2,400 | 12.00 | | |
| Sub-Total Interest on Investment | \$ 9,122 | \$ 45.61 | | |
| SUB-TOTAL NON-CASH OWNERSHIP COSTS | \$ 9,903 | \$ 49.51 | | |
| TOTAL NON CASH COSTS (OPERATING & OWNERSHIP) | \$37,258 | \$186.29 | | |
| TOTAL COSTS | \$44,994 | \$224.97 | | |
| RETURN TO MANAGEMENT (Loss) | \$(14,151) | \$(70.76) | | |
| Plus Interest on Capital Investment at 9% | 9,122 | 45.61 | | |
| RETURN TO CAPITAL INVESTMENT & MANAGEMENT | \$ 5,029 | \$ 25.15 | | |
| Plus Operator's Labor | 5,000 | 25.00 | | |
| RETURN TO CAPITAL INVESTMENT, OPERATOR'S LABOR AND MANAGEMENT | \$10,029 | \$ 50.15 | | |

TABLE 2
CAPITAL INVESTMENT SUMMARY

| ASSETS | TOTAL | PER COW (HEAD) | YOUR ESTIMATE | |
|---|-------------------|--------------------|---------------|---------|
| | | | TOTAL | PER COW |
| Cash | (Average Reserve) | \$ | \$ | |
| Land | (Table 5) | | | |
| Livestock | (Table 3) | | | |
| Buildings & Improvements | (Table 5) | | | |
| Machinery & Equipment | (Table 5) | | | |
| TOTAL INVESTMENT DUE TO COW-CALF ENTERPRISE.. | | \$ | \$ | |

TABLE 3
LIVESTOCK INVENTORY, PRODUCTION AND SALES

| Kind of Livestock | Beginning of Year | | To Be Purchased | | Head Born | Head Died | Sales | | | |
|-------------------|-------------------|----------------|-----------------|-------|-----------|-----------|-------|-----------------|-------|----------------|
| | Head | Value Per Head | Head | Value | | | Head | Weight Per Head | Price | Total Receipts |
| TOTAL | | xxx | \$ | | \$ | | | xxx | xxx | \$ |

TABLE 4
FEED REQUIREMENTS AND COSTS

| FEEDS | LIVESTOCK | | REQUIREMENTS | | | | SOURCE | | | | | |
|--|-----------------|-------------|--------------------------|-------------------------|---------------------------------|------------------|-------------------------------|----------------|-------------|----------|----------------|------------|
| | Kind of ANIMALS | No. of HEAD | Length of Feeding Period | Amount PER HEAD Per Day | Amount PER HEAD for Feed Period | TOTAL (Quantity) | HOME GROWN | | PURCHASED | | | |
| | | | | | | | Quantity | Value per Unit | TOTAL VALUE | Quantity | Price per Unit | TOTAL COST |
| | | | | | | | | | | | | |
| TOTAL VALUE OF HOME GROWN FEEDS (EXCEPT RANGE) | | | | | | | \$ | | | | | |
| | | | | | | | TOTAL COST OF PURCHASED FEEDS | | | | | \$ |

TABLE 5
CAPITAL INVESTMENT
Land; Buildings & Improvements; Machinery & Equipment

| Column # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--------------------------------------|-----------------------|------------------|-------------------------------|---|--|---------------------------|--|---|---|
| ITEM | Replace- ment Cost | Salvage Value | Average Value ¹ | Percent Due to Cow-Calf Enterprise | Average Investment Due to Enterprise ² | Useful Life (years) | Annual Cost | | |
| | | | | | | | Depreciation Straight Line ³ | Interest on Investment ⁴ | |
| <u>Machinery & Equipment:</u> | | | | | | | | | |
| Sub-Total | | | | | \$ | | \$ | \$ | |
| <u>Buildings & Improvements:</u> | | | | | | | | | |
| Sub-Total | | | | | \$ | | \$ | \$ | |
| <u>Land:</u> | | | | | | | | | |
| Sub-Total | | | \$ | | \$ | | --- | \$ | |
| TOTAL | | | | | \$ | | \$ | \$ | |
| PER COW (HEAD) | | | | | \$ | | \$ | \$ | |

¹(Col 2 + Col 3)/2

²Col 4 x Col 5

³[(Col 2 - Col 3) x Col 5]/Col 7

⁴.09 x Col 6