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Management Guide for Planning a Farm or Ranch Business

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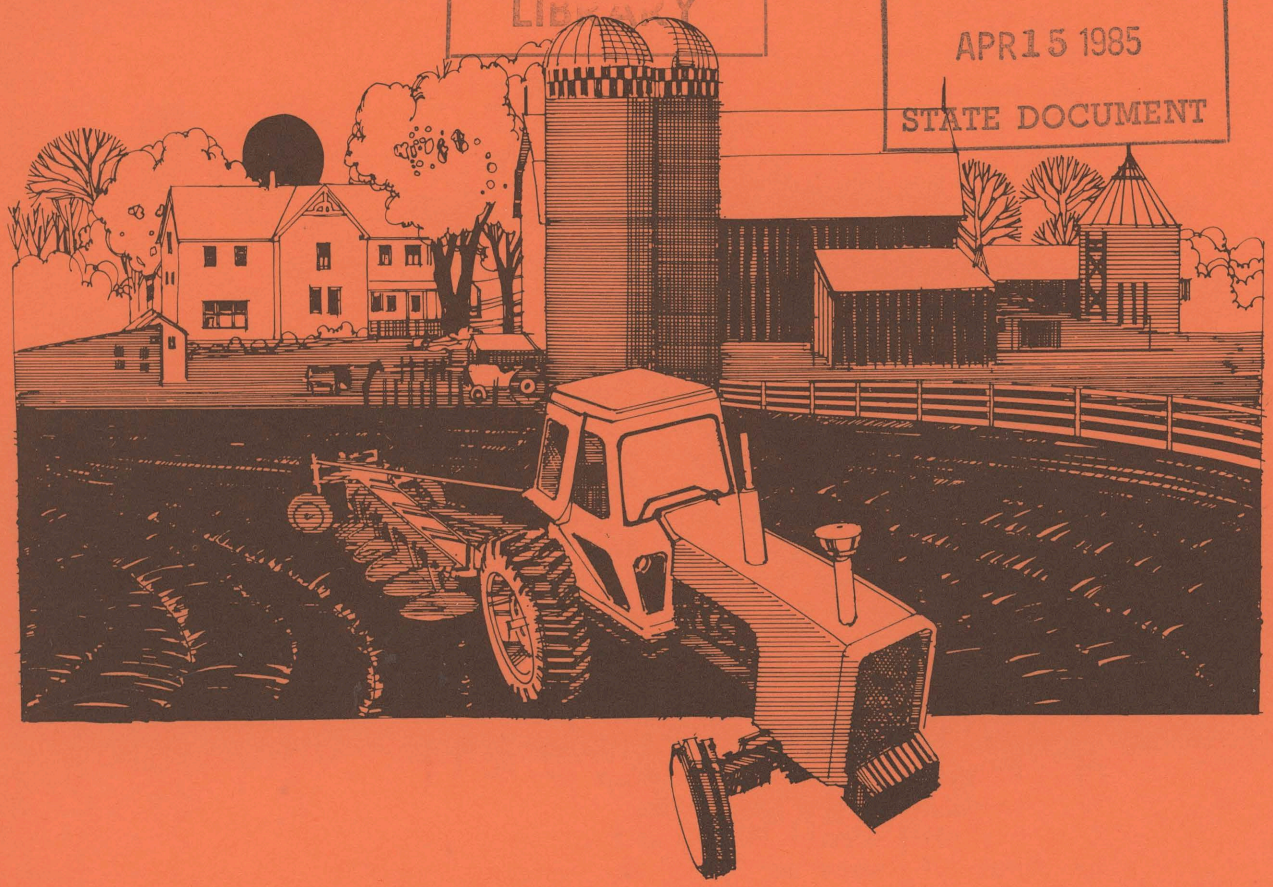

FARMS

FAMILY FARM ANALYSIS and
RESOURCE MANAGEMENT SYSTEMS

Cooperative Extension Service • South Dakota State University • U.S. Department of Agriculture

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Management Guide for Planning a Farm or Ranch Business

This farm business planning guide is designed to help you plan for more profitable use of land, capital, labor, and management. The estimates are based on slightly above average management. It is intended as a handy reference to guide individual farm planning, Extension and vocational agriculture farm management and planning programs, and to generally help promote more efficient agricultural production on South Dakota farms and ranches.

Budget information is provided for grain and forage crops. Livestock enterprise budgets are available in other publications. The data provided are based primarily on information from published and unpublished materials provided by Experiment Station and Extension personnel at South Dakota State University. Data not available from South Dakota were estimated from farm record summaries, costs of production studies, farm planning handbooks, and experiment station reports from other North Central states.

For more detailed information in specific enterprise areas contact your county Extension office. In addition, anyone using this manual who needs additional information is invited to check with farm management Extension specialists at South Dakota State University. They can provide supplementary material.

FARM BUSINESS PLANNING FOR BETTER FAMILY LIVING

Farm business planning concerns use of resources, that is, how to use land, capital, labor, and management to achieve the kind of living the farm family desires. In most cases, the family wants a higher income, but not necessarily the highest income possible. This is true because the desire for making money is closely tied to the desires for decreasing risk, decreasing the amount of time and effort needed per $100 of net income, and increasing the personal satisfaction of the individual family members. To some extent all of these desires or goals are reached by increasing income. However, a point is usually reached whereby some income must be sacrificed to satisfy nonprofit goals. A financially successful farm business pays for:

1. All cash operating expenses
2. Depreciation
3. Interest on investment
4. Operator and family labor (going wage rates)
5. Management

The budgeting procedures and data included in this planning guide are designed for farm business planning. Use them to compare various ways of organizing your farm business. Do not use them to determine income in any one year (for this you need current prices). It shows what may be the best long-time system of setting up the farm business. For short-time planning and short-time decisions, use an annual budget or annual operating plan. Keep and study farm records of your actual farm operation at all times. From them you will get information that is useful in both long- and short-time planning.

A farm plan that will result in more money for the farm family usually can be developed for every farm. Budgeting procedures provide you with a planning method by which you can easily and quickly compare different opportunities. With it you can look at different ways that you might use your land, capital, labor, and management to see what the probable income would be. Five specific things that budgeting procedures can do for you are:

1. Assist you to avoid costly mistakes of organization which can happen unless you consider your whole farm business. Make your mistakes on paper rather than in practice.
2. Help you take a closer look at your whole farm operation. Remember each farm is different, since each family has different resources and different needs.
3. Enable you to make plans that are adapted to your family and your farm and estimate what income to expect.
4. Help you decide if with your present resources it is possible to reach your family's goals, wants, and needs.
5. Help you decide what changes or adjustments in resources are needed and/or possible so as to be able to reach your family's goals, wants, and needs.

HIGH PROFIT FARM PLANS

Generally speaking with good cropland, you should first plan the land use and cropping programs for your farm. However, most farms do not have enough acres of cropland to earn the desired family income from crops alone. Therefore, these farm business operations should include livestock enterprises.

On the other hand, if the farm or ranch has tillable land with relatively low crop productivity, plan the livestock program first. Then fit the cropping system to the livestock program.

The Cropping System

High profit cropping systems use crops and combinations of crops that will produce the most returns per acre in value, in corn equivalent, and hay equivalent at lowest cost. Look for ways to cut the cost of production per bushel or ton of the crop produced. If lower costs per unit are to be achieved, recommended

agronomic practices as to tillage methods, timeliness, varieties, rates of seeding, disease control, insect control, weed control, soil testing, and fertilizer use must be followed. In addition, carefully consider investment in machinery and equipment. In some cases it may be more profitable to use custom operators or leasing plans. By using these alternatives you may be able to use your capital in a more productive aspect of the farm business. Partial budgets may be used to determine which alternative may be most profitable.

The Livestock System

Development of the most profitable livestock program for your farm is an individual problem that involves many factors, including available feed supplies, labor, managerial skill, and personal preferences. Keep in mind as you plan that:

1. Profitable livestock programs are built around the feed supply produced by sound land use and cropping systems. With the capital and labor available these livestock programs provide for:
   - A. Use of nonsalable pastures, crop aftermath, and by-product feeds.
   - B. Use of salable feeds.
   - C. Use of purchased feed.
2. Although higher returns from labor can usually be secured from crop production, livestock use labor that cannot be used for growing crops. With better distribution of the use of labor, a larger volume of business on a given acreage is possible.
3. Available markets or the lack of them will greatly influence the amount as well as the kind of livestock kept.
4. Livestock efficiency is one of the most important single factors influencing livestock net returns. Each livestock enterprise requires its own particular skills and practices. To be a good livestock producer you must know and keep up with those that apply to your livestock. Some bench marks for profitable livestock production are:
   - A. Pigs marketed per litter—7.5-9.5
   - B. Pounds of butterfat per cow—400-450
   - C. Percent beef calf crop weaned—90-95
   - D. Percent lamb crop raised—120-140
   - E. Daily gains
     - Fed steer calves—2.0-2.5
     - Fed heifer calves—1.8-2.2
     - Fed yearlings—2.3-3.0
     - Fed lambs—0.4-0.7
     - Pigs (birth to market)—1.4-1.6
   - F. Eggs per hen housed—210-250
   - G. Income per dollar's worth of feed fed (adjusted for type of livestock)
     - Average Good—$1.40-$1.90
     - Realistic goal—$1.60-$2.10
5. **Invest in a costly automated system only if you can clearly see that it will pay for itself. New equipment should return from 22 to 28% of its purchase price each year to cover depreciation, interest, taxes, repairs, and other costs of owning the equipment.**

BUDGET FOR MORE PROFIT

Budgeting is a planning method that you can use to compare different income opportunities on your farm or ranch. In this planning you need to consider three kinds of budgets. They are enterprise, total business, and partial budgets.

Use steps 1, 2 and 3 in Steps (EC 743) to develop your crop and other land use enterprise budgets. Use typical example livestock enterprise budgets to estimate your own costs.

When you have decided on enterprise budgets that apply to your unit you are ready to analyze your whole farm or ranch business. You can do this by completing all of the steps in "Steps in Planning A Farm or Ranch Business" (EC 743).

How does the profitability of your present plan compare with other plans for your farm or ranch business? Is there a more profitable plan that can be carried out? Possibly so—other likely alternatives can be tested by the use of partial budgets. A plan sheet such as the one shown here will enable you to quickly estimate the potential effect of a planned change before you include it in the plan for your whole farm or ranch business.

Partial Budget for Planned Changes

Enterprise Dropped _____

Enterprise Added _____

I. Returns from enterprise added

_____ _____

_____ _____

dollars

TOTAL RETURNS ADDED _____

II. Costs for enterprise dropped

_____ _____

_____ _____

TOTAL COSTS DROPPED _____

III. Costs for enterprise added

_____ _____

_____ _____

TOTAL COSTS ADDED _____

IV. Returns from enterprise dropped

_____ _____

_____ _____

TOTAL RETURNS DROPPED _____

V. Estimate of change in net income

A. Add returns added (I) to costs dropped (II) _____

B. Add costs added (III) to returns dropped (IV) _____

C. EXPECTED CHANGE IN NET INCOME (A minus B) _____

TABLE 1. PASTURE PRODUCTION RATES FOR NORMAL SOIL GROUPS

Average Annual Precipitation	Native Range or Pasture Condition			
	Excellent	Good	Fair	Poor
	- Animal Unit Months per acre* -			
30-34	1.2-2.0	.9 -1.6	.6-1.2	.3 -.6
25-29	1.0-1.8	.75-1.4	.5-1.1	.25-.5
20-24	.8-1.5	.6 -1.2	.4- .9	.2 -.4
15-19	.6-1.2	.45- .9	.3- .7	.15-.3
10-14	.4- .9	.3 - .6	.2- .5	.1 -.2
5- 9	.2- .6	.15- .4	.1- .3	.05-.1

*An AUM is the grazing needed for a 1,000 pound cow for 1 month.

USE THESE NOTES TO DETERMINE YOUR GRAZING RATE

The figures to the right in each column under each range or pasture condition are rates at which many pastures are being used. If our range and pasture lands are grazed at this higher rate they will shift to a lower condition over time. Also, livestock production will be lower than assumed in the budget tables.

The figures to the left in each column under each range or pasture condition are recommended agronomic rates of use. With this rate of use the pasture should improve in condition.

Take into account soil group and soil condition to estimate your grazing rate.

For sand, sandy, silty and clayey soil groups use the values given for the annual average precipitation level. --- For wet lands triple the values given and for subirrigated areas double the values given. --- For overflow and saline lowlands use values for the next higher precipitation level. --- For choppy sands use values one-half level lower. --- For dense clay, shallow soil, and panspots use values one-half to one level lower. --- For very shallow soils, shale, and badlands use values at least two levels lower.

TAME PASTURE: Animal unit months of grazing from land planted to grass or grass legume mixtures can be estimated if you can estimate the hay yield that you would expect from these acres. AUM'S of grazing per acre equal approximately 2 times the tons of hay that could be harvested.

Grazing capacity can also be estimated based on native pasture productivity. Use a factor of 2½ times the expected productivity of good to excellent native pasture for the area. For example if native pasture is expected to produce one AUM per acre, tame pasture should produce 2½ AUM'S of grazing.

TABLE 2. FORAGE CONVERSION RATES FOR HAY EQUIVALENT

Forage	Alfalfa Hay Equivalent Factor
Alfalfa hay	1.00
Grass hay	.90
Oat hay	.90
Corn silage (30% DM)	.30
Sorghum silage (30% DM)	.27
Oat silage (30% DM)	.29
Alfalfa haylage (65% DM)	.63
Alfalfa silage (55% DM)	.54
Alfalfa silage (25% DM)	.28
Alfalfa grass silage (40% DM)	.30
Mixed grass silage (30% DM)	.27

Other feed value relationships:*

1 T. corn silage = 1 AUM

1/3 T. grass hay = 1 AUM

1 T. alfalfa equivalent = 3.5 AUM's

3 T. corn silage = 1 T. grass hay + 4 bu. corn

3 T. corn silage + 200 lbs. supp. = 1 T. alfalfa hay + 8 bu. corn

1 T. grass hay = 3 T. oat silage + 2 bu. corn

1 T. alfalfa hay = 3 T. oat silage + 300 lb. supp.

1 T. alfalfa grass silage = 1 T. corn silage + 100 lbs. supp.

1 T. corn silage = 4 bu. corn + .15 T. grass hay

1 bu. corn = 1.1 bu. sorghum = 1.25 bu. barley = 2 bu. oats = .9 bu. wheat

*Where supplement is indicated soybean oilmeal, 44% was assumed.

Depending upon the farm situation and the fall season small grain stubble and corn stalk fields may provide up to 1 AUM of grazing with the most usual rate of use being less than .5 AUM per acre.

Approximately 1 ton silage is produced for each 5 bushels of corn yield or for each 7 bushels of oat yield.

TABLE 3. COMPUTING ANIMAL UNITS

Kind of Animal	Number per Animal Unit	Conversion Factor*
Beef cow and calf	1	1.00
Dairy cow	1	1.00
Weaned calves (400-600)	2	.50
Heifers (550-700)	1.7	.65
Deferred steers (600-750)	1.5	.70
Bulls	.8	1.25
Horses	.8	1.25
Colts	2	.50
Ewes and lambs	5	.20
Ewes	7	.14
Lambs raised	15	.07
Feeder lambs	20	.05
Brood sows	2.5	.40
Hogs raised to 200 lbs.	5	.20
Feeder pigs	7	.15
Hens or ducks	100	.01
Pullets raised	250	.004

*1,000 pounds of body weight is commonly considered as an animal unit. If you prefer to estimate your own animal units add beginning and ending weights and divide this total by (2 times 1,000).

TABLE 4. CORN EQUIVALENT FEED VALUE OF GRAINS*

Grain	Dairy Cows		Feeding Beef Cattle		Feeding Hogs		Feeding Lambs		Average Values
	bu	lb	bu	lb	bu	lb	bu	lb	bu
Corn	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sorghum	1.00	1.00	.87	.87	.92	.92	.95	.95	.95
Barley	.86	1.00	.77	.90	.82	.95	.75	.87	.80
Wheat	1.07	1.00	1.12	1.05	1.10	1.03	.91	.85	1.10
Oats	.51	.90	.49	.85	.49	.85	.46	.80	.50

*The figures shown in this table are approximate rates that may be expected when the various feeds are used in appropriate amounts and in well balanced rations. Consult literature on livestock feeding for more complete information.

TABLE 5. ESTIMATED CROP MACHINERY
INVESTMENT AND MACHINE OWNERSHIP COSTS PER TILLABLE CROP ACRE

Area and Tillable Acres		Investment		Machine Ownership Costs	
		New	Average	Depreciation	Interest
		-dollars per acre-			
North East					
Small	(under 300)	270	150	24.30	18.00
Medium	(300-700)	250	140	22.50	16.80
Large	(over 700)	220	120	19.80	14.40
East North Central					
Small	(under 600)	200	110	18.00	13.20
Medium	(600-1,000)	180	100	16.20	12.00
Large	(over 1,000)	155	85	13.95	10.20
Central North Central					
Small	(under 700)	170	95	15.30	11.40
Medium	(700-1,200)	155	85	13.95	10.20
Large	(over 1,200)	130	70	11.70	8.40
South Central					
Small	(under 500)	225	125	20.25	15.00
Medium	(500-900)	210	115	18.90	13.80
Large	(over 900)	170	95	15.30	8.55
West South East					
Small	(under 400)	290	160	26.10	19.20
Medium	(400-700)	270	150	24.30	18.00
Large	(over 700)	225	125	20.25	15.00
East South East					
Small	(under 300)	280	155	25.20	18.60
Medium	(300-600)	260	145	23.40	17.40
Large	(over 600)	220	120	19.80	14.40
Western Range					
Average for area		150	90	13.50	10.80

If you do not have your own inventory value for crop machinery, use the average per acre investment that you feel is closest to your situation.

YOUR FARM ESTIMATE

_____ tillable acres x $_____ per acre = $_____ estimated machinery inventory

Depreciation calculated based on ten year life with 10 percent salvage value is equal to 9% of new investment

Interest charge was calculated at 12 percent of average investment.

TABLE 6. ESTIMATED TOTAL FAMILY LIVING COSTS
RELATED TO NUMBER OF PERSONS AND INCOME

Family Income	Number of person in the household				
	2	3	4	5	6
11,000	8,850	9,415	9,915	10,375	10,785
13,000	9,735	10,455	11,100	11,725	12,285
15,000	10,665	11,380	12,020	12,640	13,195
17,000	11,605	12,330	12,980	13,600	14,155
19,000	12,645	13,360	14,000	14,640	15,190
21,000	13,865	14,600	15,255	15,875	16,430
23,000	14,395	15,140	15,805	16,460	17,045
25,000	14,930	15,685	16,360	17,040	17,650
27,000	15,400	16,215	16,940	17,680	18,280
29,000	15,910	16,740	17,480	18,220	18,885
31,000	16,410	17,305	18,100	18,835	19,490
33,000	17,050	17,910	18,680	19,430	20,100
35,000	17,550	18,385	19,130	19,965	20,710
37,000	17,960	18,900	19,740	20,570	21,310
39.000	18,450	19,400	20,250	21,090	21,940
41,000	18,960	19,940	20,810	21,720	22,535
43,000	19,470	20,480	21,380	22,305	23,130
Poverty guidelines	4,850	6,020	7,190	8,360	9,530

Note: Total estimated expenditures above do not include taxes, savings, major remodeling, legal fees, or funeral expenses.

If you do not have your own records, use this table to estimate your living expenses for line 36, Step 8, in "Steps in Planning a Farm or Ranch Business". To use the table consider the income shown on line 35, Step 8, of your plan as family income. Look across the row headed with the amount of income that is closest to your income shown on line 35, Step 8. If you are an average spender the dollars shown on this line in the column with the number in your household will be a close estimate of what you actually spend for family living

TABLE 7. ESTIMATED MAN HOURS PER ACRE AND ALLOCATED VARIABLE POWER AND IMPLEMENT COSTS PER ACRE, PRE-HARVEST OPERATIONS

Operation	Machine Size	Man Hours	Repairs & Service	Fuel, Oil Grease
Plow	4-16's	.52	$5.08	$2.36
Plow	5-16's	.41	4.94	2.38
Plow	6-16's	.35	4.76	2.34
Plow	8-18's	.25	4.58	2.29
Plow	10-18's	.18	4.50	2.06
Plow	16-18's	.11	4.44	1.84
Disk (Tandem)	17 feet	.15	.48	.61
Disk (Tandem)	19 feet	.14	.56	.64
Disk (Tandem)	22 feet	.12	.56	.66
Disk (Tandem)	25 feet	.10	.54	.68
Disk (Tandem)	30 feet	.09	.53	.47
Chisel Plow	15 feet	.20	.67	1.18
Chisel Plow	17 feet	.17	.65	1.21
Chisel Plow	25 feet	.13	.75	1.35
Chisel Plow	29 feet	.11	.73	1.40
Chisel Plow	31 feet	.10	.74	1.46
Field Cultivator	12 feet	.27	.52	.87
Field Cultivator	17 feet	.20	.50	.83
Field Cultivator	27 feet	.13	.56	.81
Field Cultivator	33 feet	.10	.57	.80
Field Cultivator	49 feet	.07	.57	.78
Springtooth	24 feet	.12	.23	.46
Springtooth	36 feet	.08	.22	.36
Spiketooth Harrow	30 feet	.10	.28	.52
Spiketooth Harrow	48 feet	.07	.21	.51
Spiketooth Harrow	66 feet	.04	.22	.46
Plow/pony press	4-16's	.60	6.25	2.80
Plow/pony press	6-16's	.40	5.95	2.73
Plow/pony press	8-18's	.30	5.65	2.70
Rotary Hoe	25 feet	.12	.34	.33
Rotary Hoe	40 feet	.08	.26	.27
Chop stalks	4 row	.20	.49 (G)	.65
Chop stalks	8 row	.12	.54	.53
Surflex	16 feet	.20	.63	.72
Surflex	2-16 feet	.11	.58	.67

Fuel cost conversion --- (G-D) = 0.83 (D-G) = 1.20 (G) Gasoline
Repair cost conversion --- (G-D) = 1.12 (D-G) = 0.89 (D) Diesel

Table 7 (Cont'd)

Operation	Machine Size	Man Hours	Repairs & Service	Fuel, Oil Grease
Noble Blade	5 feet	.55	4.52	2.40
Noble Blade	10 feet	.32	4.43	2.35
Rod Weeder	12 feet	.22	.36	.65
Rod Weeder	24 feet	.10	.28	.43
Plant Row Crops, W/O	4 row, 40"	.16	.56 (G)	.50
Plant Row Crops, W/FC	4 row, 40"	.22	.78 (G)	.53
Plant Row Crops, W/FC	6 row, 36"	.15	.96	.48
Plant Row Crops, W/FC	8 row, 36"	.12	.84	.48
Plant Row Crops, W/FC	12 row, 30"	.08	1.24	.37
Cycloplanter, W/FC	4 row, 36"	.16	.70	.31
Cycloplanter, W/FC	6 row, 30"	.13	.78	.40
Cycloplanter, W/FC	8 row, 30"	.10	.77	.39
Cycloplanter, W/FC	12 row, 30"	.06	.68	.31
No Till Planter	4 row, 30"	.29	.87	.92
No Till Planter	8 row, 30"	.15	1.10	.71
No Till Planter	12 row, 30"	.10	1.04	.66
Cultivate	4 row	.26	.66 (G)	.64
Cultivate	6 row	.17	.58	.46
Cultivate	8 row	.13	.50	.40
Lister Planter	4 row	.26	.80	.85
Lister Cultivator	4 row	.24	.55	.62
Drill Small Grain	10 feet	.35	2.32	1.15
Drill Small Grain	14 feet	.23	2.20	.76
Drill Small Grain	20 feet	.18	2.01	.58
Drill Small Grain	28 feet	.15	1.90	.54
No Till Drill	10 feet	.39	2.47	1.18
No Till Drill	20 feet	.20	2.30	.62
Small Grain; Cultivate drill and harrow	14 feet	.24	4.28	1.89
Small Grain; Cultivate drill and harrow	20 feet	.19	4.26	1.48
Engate Seeder	----	.09	.15	.32
Roto Tiller	16 feet	.20	.48	.80
Anhydrous Applicator	24 feet	.16	.70	1.24
Dry Fert. Spreading	45 feet	.06	.19	.21
Spray, Corn or S.G.	26 feet	.16	.22 (G)	.39

(G) Gasoline

TABLE 8. ESTIMATED MAN HOURS PER ACRE AND ALLOCATED VARIABLE POWER AND IMPLEMENT COSTS PER ACRE, HARVEST OPERATIONS

Operation	Machine Size	Man Hours	Repairs & Service	Fuel, Oil Grease
Swath Small Grain	14 feet (PTO)	.18	$ 1.19	$ .52
Swath Small Grain	18 feet (PTO)	.14	1.17	.37
Swath Small Grain	21 feet (PTO)	.12	1.08	.33
Swath Small Grain	16 feet (SP)	.14	1.69 (G)	.68
Swath Small Grain	18 feet (SP)	.13	1.87	.38
Combine Grain & Beans	16' PTO & M	.31	2.70	1.60
Combine Grain & Beans	20' PTO	.26	2.52	1.48
Combine Grain & Beans	20' SP	.25	2.86	1.44
Combine Grain & Beans	24' SP	.20	2.72	1.20
Haul & Store S.G. & Beans	Tractor-Wagon	.39	.40	1.60
Haul & Store S.G. & Beans	Truck	.32	.25	1.85
Corn Picker-Sheller	2 row	.79	2.15	3.60
Haul & Store Corn	Tractor-Wagon	.60	.42	2.45
Haul & Store Corn	Truck	.50	.45	2.75
Chop Silage (8T)	2 row	.63	5.40	2.45
Chop Silage (8T)	4 row	.40	5.35	2.20
Haul & Store Silage	3 tractors	1.70	1.90	4.85
Haul & Store Silage	Dump wagon-Truck	.55	3.55	2.90
Mow Hay	7 feet	.35	.95 (G)	.80
Mow Hay	9 feet	.27	.85	.54
Rake Hay	24 feet (dump)	.10	.20	.22
Rake Hay	7 feet	.30	.75	.52
Rake Hay	9 feet	.25	.70	.45
Windrow Hay	16 feet (SP)	.17	1.69	.68
Windrow Hay	18 feet (SP)	.16	1.87	.38
Windrow Hay	21 feet (SP)	.14	1.90	.33
Mow, Condition	Windrow, 12'	.20	1.50	.34
Mow, Condition	Sickle, 9'	.33	1.70	.63
Bale Hay (1.5 T/A) Sm. Sq.	4.5 T/hr.	.40	5.00+	1.16
Large Round Bale (1.5 T/A)	6.0 T/hr.	.30	2.08++	1.25
Stack Hay (1.5 T/A)	Front Loader	.35	1.15	.88
Stack Mover (1.5 T/A)	10 ton	.10	1.00	.45
Stack Wagon (1.5 T/A)	3 ton	.28	4.75	1.30
Stack Wagon (1.5 T/A)	6 ton	.24	5.95	.95
Haul, store bales (per T)	Bale wagon (SP)	.25	2.20	.65
Haul, store bales (per T)	2 men	1.40	.45 (G)	1.15
Chop Haylage	12' windrow	.45	4.10	2.20
Chop Haylage	14' windrow	.40	3.60	2.25
Haul & Store Haylage	Dump wagon-Truck	.45	2.90	2.35
Haul & Store Haylage	(3 tractors)	1.40	1.55	3.95
Corn Combine	4 row (PTO)	.39	3.65	1.85
Corn Combine	4 row (SP)	.37	3.60	1.80
Corn Combine	6 row (SP)	.25	3.07	1.44
Corn Combine	8 row (SP)	.20	2.75	1.25

+Includes cost of twine ($2.40) per Ton of hay at 1.5 ton.
++Includes cost of twine ($0.55) per Ton of hay at 1.5 ton.

Table 9. ESTIMATED ANNUAL LABOR REQUIREMENTS IN HOURS PER ACRE, GRAIN AND FORAGE CROPS,* INCLUDING OVERHEAD AND MAINTENANCE

Enterprise	Mechanization and Efficiency Level				Yours
	Low	Average	High	Typical	
	-hours per care-				
Corn	4.5	3.6	3.0	3.3	
Wheat after small grain	2.9	2.5	2.0	2.2	
Wheat after row crops	3.4	2.9	2.4	2.6	
Wheat on fallow	2.6	2.2	1.6	1.8	
Barley	2.9	2.5	2.0	2.2	
Rye	3.0	2.6	2.1	2.3	
Oats	3.0	2.6	2.1	2.3	
Flax	2.8	2.4	1.9	2.1	
Soybeans	4.0	3.0	2.0	2.7	
Sunflowers	3.5	2.9	1.9	2.4	
Grain Sorghum	3.3	2.8	1.8	2.3	
Alfalfa or grass*	0.9	0.8	0.6	0.7	
Annual Hay (Pre-harvest)	1.7	1.4	1.2	1.3	
Summer Fallow	1.5	1.3	1.1	1.2	
Baled hay+					
1 cutting	3.9	3.2	2.6	3.0	
2 cuttings	6.3	5.0	4.3	4.9	
3 cuttings	8.4	6.8	6.2	6.5	
Stacked hay					
1 cutting	1.8	1.6	1.0	1.3	
2 cuttings	3.2	2.4	1.9	2.2	
3 cuttings	4.2	3.6	2.6	3.0	
Stack Wagon, swath, move					
1 cutting	1.3	1.1	0.8	1.0	
2 cuttings	2.2	1.7	1.5	1.8	
3 cuttings	3.0	2.2	2.0	2.4	
Silage					
Alfalfa**	4.1	2.9	2.2	2.5	
Corn	6.0	4.6	3.8	4.4	
Oats	5.1	3.8	3.1	3.6	

* Labor requirements for planting only. Labor for making hay or silage is estimated in forage harvest system.

** One cutting assumed. For two cuttings multiply hours by 1.8.

\+ For big bale, windrow, haul and store use 50% of hours above.

TABLE 10. LIVESTOCK LABOR REQUIREMENTS, HOURS PER UNIT

A. Dairy Cows

Cows	Stanchioned	Gutter Cleaner and Pipeline	Free Stall* Walk Thru	Free Stall* Herringbone
(number)		-hours per cow-		
Under 25	90	85	75	70
25 - 49	75	70	60	55
50 - 74	65	60	50	45
75 - 100	55	50	40	35
Over 100	50	45	35	30

* For loose housing systems add 5 hours to free stall systems.

B. Beef Cows (To weaning time)

Farm Conditions Calf Sold		Ranch Conditions Calf Sold	
(number)	(hours per head)	(number)	(hours per head)
Under 25	12	Under 100	8 (Add one hour per cow for A.I.)
50 -75	11	100 - 200	7
50 -75	10	200 - 300	6
Over 75	8	Over 300	5

C. Other Cattle

Wintering		Summer Pasture	
(number)	(hours per head)	(number)	(hours per head)
Under 75	4	Under 75	1.0
75 - 150	3	75 - 150	0.8
Over 150	2	Over 150	0.6

D. Brood Sows

Litters per Year per sow	Sell Market Hogs 1	Sell Market Hogs 2	Sell Feeder Pigs 1	Sell Feeder Pigs 2
(number of sows)	(hours per sow)		(hours per sow)	
Under 10	26	42	23	35
10 - 20	22	38	19	32
20 - 30	20	33	18	28
30 - 40	18	28	16	24
40 - 60	16	25	14	22
Over 60	14	21	12	18

E. Ewes and Lambs

Sell Mixed Market and Feeder Lambs	
(number)	(hours per ewe)
Under 50	4.5
50 - 100	4.0
100 - 300	3.5
300 - 500	3.0
500 - 750	2.5
Over 750	2.0

Table 10. (Cont'd)

F. Livestock Feeding Enterprises (hours per month)

Beef (1)		Lambs (100)		Pigs (10)	
(number)	(hours/mo.)	(number)	(hours/mo.)	(number)	(hours/mo.)
40 - 80	.90	Under 100	30	Under 150	2.1
80 - 120	.70	100 - 300	20	150 - 300	1.8
120 - 200	.45	300 - 500	10	200 - 450	1.5
200 - 300	.35	500 - 800	6	450 - 600	1.2
Over 300	.25	Over 800	5	Over 600	0.9

G. Laying Hens

Farm Flock		Commercial Flock	
(number)	(hours per 100)	(number)	(hours per 1,000)
Under 100	240	Under 2500	800
100 - 200	210	2500 - 5000	550
200 - 300	180	5000 - 7500	400
Over 300	150	Over 7500+	300

* Includes labor to raise 120 sexed chicks per 100 hens.

+Labor required for 10,000 bird flock may be less than 200 hours per 1000 hens when fully mechanized.

H. Raising Dairy Calves

Springing Heifers		Yearling Feeders	
(number)	(hours per head)	(number)	(hours per head)
Under 15	28	Under 15	12
15 - 30	23	15 - 30	10
Over 30	20	Over 30	8

All labor hours include an addition for total general farm overhead labor allocated to each enterprise unit in tables 9 and 10.

TABLE 11. SOCIAL SECURITY TAX RATES

Calendar Year	Self Employed Rate (%)	Employee Rate (%)	Employer Rate (%)
1984	11.3	6.70	7.00
1985	11.8	7.05	7.05
1986	12.3	7.15	7.15
1987	12.3	7.15	7.15
1988	13.02	7.51	7.51
1989	13.02	7.51	7.51

See IRS Circular A, "Agricultural Employees Tax Guide", for additional details if needed.

Note: A combination of self-employed social security and employer/employee tax should not be paid on more than the wage base.

TABLE 12. ESTIMATED ANNUAL OVERHEAD EXPENSE*

Acres Operated	Primary Source of Cash Income			
	Beef Cows or Ewes	Row crops or Small Grain	Livestock Feeding	Dairy or Swine
	---dollars per year---			
Under 640	2,150	3,110	3,740	4,560
640-960	2,480	3,610	4,560	5,540
960-1,440	3,280	4,280	5,370	6,520
1,440-2,080	3,920	4,750	5,880	7,330
2,080-2,880	4,600	5,090	6,520	8,140
2,880-3,840	5,570	5,750	7,490	9,130
3,840-5,400	6,260	6,612	8,360	9,980
5,400-7,360	7,300	7,440	9,160	10,650
Over 7,360	8,210	8,410	9,980	11,400

*Overhead expense includes costs of operating the farm or ranch business not specifically attributed to crop or livestock enterprises, such as farm share of auto and telephone, legal fees, repairs on storage and service buildings, record books, farm magazines, and other miscellaneous costs.

Table 13. ANNUAL PAYMENT PER $1,000 BORROWED,
BY YEARS TO REPAY AND BY INTEREST RATE

Number of Years To Repay Loan	Interest Rates					
	7%	9%	11%	13%	15%	17%
1	$1,070	$1,090	$1,110	$1,130	$1,150	$1,170
3	381	395	409	423	438	453
5	244	257	271	284	298	313
7	186	199	213	226	241	257
10	142	156	170	184	199	215
15	110	124	139	155	171	188
20	95	120	126	142	160	178
25	86	102	119	136	155	173
30	81	97	115	134	152	172
35	77	95	113	132	151	171
40	75	93	112	131	150	170

			Example
A.	Cash available for new investment (Line 37, Step 8, Step Plan, EC 743)	_____	$4,020
B.	Year to Repay Loan	_____	30
C.	Interest Rate	_____	13
D.	Annual Payment per $1,000 (From Table 13, above)	_____	$ 134
E.	Loan Capacity (a divided by D X 1000)	_____	$30,000

TABLE 14. INCOME TAX AND SELF EMPLOYMENT SOCIAL SECURITY TAX

A. Estimated Expected Income Tax
   1. Income on Line 31, Step 8, EC 743 _____
   2. 60% of capital gain income from sale of breeding stock _____
   3. Adjusted Taxable Gross Income (line 1 minus line 2) _____
   4. Number of Dependents _____
   5. Exemptions (number of dependents x $1,000) _____
   6. Taxable Income (line 3 minus line 5) _____
   7. Calculate tax based on current rates (Base dollars plus % of excess) _____
   8. Typical investment credit claimed for an average year _____
   9. Estimated Income Tax Due (line 7 minus line 8) _____

B. Self Employment Social Security Tax
   1. Income Subject to Social Security Tax (Farm Income Line 28, Step 8, EC 743) _____
   2. 1984 maximum payment is $4,271.40 on an income of $37,800 _____
   3. If income subject to social security is less than $37,800 multiply the amount on line B1 by 0.113 for 1984 _____
   4. Social Security Tax Due for 1984 (lower of line 2 or 3, See Table 11 for rates after 1984) _____

1984 INCOME TAX RATES--IRS SCHEDULE Y-MARRIED TAXPAYERS

Over	But not Over	Tax Basis	Excess Over
$ 3,400	$ 5,500	$ 0 + 11%	$ 3,400
5,500	7,600	231 + 12%	5,500
6,600	11,900	483 + 14%	7,600
11,900	16,000	1,085 + 16%	11,900
16,000	20,200	1,741 + 18%	16,000
20,200	24,600	2,497 + 22%	20,200
24.600	29,900	3,465 + 25%	24,600
29,900	35,200	4,790 + 28%	29,900
35,200	45,800	6,274 + 33%	35,200
45,800	60,000	9,772 + 38%	45,800
60,000	85,600	15,168 + 42%	60,000
85,600	109,400	25,920 + 45%	85,600
109,400	162,400	35,630 + 49%	109,400
162,400	---	62,600 + 50%	162,400