DEVELOPING A FARM PLAN

by

J. H. Sitterly

and

J. I. Falconer

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IT PAYS TO FARM WELL

The following are examples of the affect of organization on farm income

	ASHTABULA CO. #		WYANDOT CO. #		WOOD CO. #	
	Well Organized Farms	Poorly Organized Farms	Well Organized Farms	Poorly Organized Farms	Well Organized Farms	Poorly Organized Farms
Number of farms	9	20	12	15	12	16
Annual productivity balance	+.42	-.34	+.94	-.38	+.12	-.63
Percent of rotated area						
In corn	24.2	20.0	26.0	28.4	30.0	37.0
In soybeans	0.8	3.8	*	*	1.8	1.0
In small grain	29.5	22.7	29.8	32.4	35.0	42.0
In hay & rotation pasture	44.4	44.0	43.1	37.5	31.5	16.3
Restorative factor for hay	+1.9	+0.4	+1.4	+ .9	+1.9	+1.6
Manure, ton per rotated acre	4.2	1.9	2.3	1.4	1.9	1.2
Yield per acre 1935						
Corn, bushels	46	32	61	53	57	54
Oats, bushels	38	28	45	29	49	45
Wheat, bushels	30	18	29	25	*	*
Hay, ton	1.6	1.1	*	*	*	*
Animal units per 100 rotated A's	48	24	34	21	18	9
Hay consuming animal units per 100 rotated acres	42	21	21	14	10	6
Hogs produced per 100 rotated acres, cwt.	*	*	118	71	70	13
Average size of farm, acres	127	99	141	144	145	122
Rotated acres per farm	58	48	104	115	125	111
Labor income per farm, 1935	$1070	$393	$1604	$1166	$1754	$1061
Labor income per rotated A.	$18.34	$8.12	$15.42	$10.09	$14.02	$9.54

In each county the soil resources & market outlets were the same for both groups of farms.
* Data not available. Source - Ohio Agr. Exp. St. Bulleton 694.

A GOOD FARM ORGANIZATION IS ESSENTIAL TO PROFITABLE FARMING

Some of the more important characteristics of a good farm organization are -

First - It efficiently utilizes the resources which the farmer has at his command.

Second - It maintains and improves the productivity of the resources.

Third - It produces sufficient income to adequately meet the needs of the farm family.

THE FIRST STEP IN ACHIEVING A GOOD ORGANIZATION IS TO DEVELOP A SOUND FARM PLAN

These forms are designed for use in teaching farm organization and management in Vocational Agriculture Schools. However, the forms may also be used by individuals who wish to work out a detailed farm plan.

DEVELOPING A FARM PLAN

A PLAN FOR THE _____ FARM

LOCATED IN THE _____ COUNTY _____ TOWNSHIP

I INVOICING AND APPRAISING THE RESOURCES

A. Inventory of the Present Land Use

Type of Use	Acres
Rotated crop land	
Permanent pasture land	
Woodland pastured	
Woodland not pastured	
Farmstead, roads, waste and idle land	
Total Farm Area	

B. Inventory of the Water Supply

Water for human consumption -

Sources: spring _____ shallow well _____ deep well _____ cistern _____ other _____

Wholesomeness of supply _____ Has it been tested for purity? _____

Adequacy of supply _____

Dependability of supply _____

If not free flowing, how pumped _____

Water for livestock at the buildings -

Sources: spring _____ shallow well _____ deep well _____ cistern _____ pond _____ stream _____

Adequacy of supply _____

Dependability of supply _____

If not free flowing, how pumped _____

Water for livestock on pasture -

Sources: Springs _____ shallow wells _____ deep wells _____ ponds _____ streams _____

Adequacy of supply _____

Dependability of supply _____

If not free flowing, how pumped _____

Comments on the water supply situation _____

_____

_____

_____

1. MAP OF FARM SHOWING PRESENT LAND USE WATER SUPPLY & FIELD LAY OUT

C. Inventory of Soil Resources

1. Soil analysis and lime requirements

Field and Sample Number	Soil type or color	Acres represented by Sample	Productivity index of soil type	Results of soil analysis				Tons Agr. Ground Limestone per A. recommended for	
				Ph	Active Ca	available P	available K	Clover	Alfalfa

2. MAP OF FARM SHOWING MAJOR SOIL TYPES

3. History of lime applications

(Record each lime application made in the last eight years)

Field Number	Acres	Dates limed	Total tons applied	Kind of liming material used

D. Inventory of Topographic Conditions

1. Acres of land by different slope classes

Type of land use at present	Acres of different slope classes as they are related to the type of control and use necessary if erosion is to be minimized.			
	Level to slightly undulating. No special control or use needed	Undulating to slightly rolling. Contour cropping usually desirable if cultivated often.	Rolling to slightly hilly. Contour cropping or permanent pasture necessary.	Hilly or broken. Permanent pasture and woods.
Crop land				
Permanent pasture land				
Wood land				
Other land				

General comments on erosion situation _____

_____

_____

2. MAP OF FARM SHOWING TOPOGRAPHY OR SLOPE CLASSES

E. Inventory of Drainage and Flood Conditions

Type of land use	Drainage adequate Acres	Drainage inadequate Acres	Land subject to flood Acres	Adjustments needed to correct trouble
Crop land				
Permanent pasture land				
Other land				

General Comments _____

_____

_____

_____

F. Inventory of the Climatic Conditions

Do late spring frosts cause irequent damage?____ Do early fall frosts cause frequent damage?____

Is growing season always long enough to mature a good corn crop?_____

Is snow cover generally adequate to protect fall sown grain and meadow crops? _____

Are summer temperatures too high for good yields of oats? _____ Potatoes?_____

Is the area subjected during the crop season to frequent - (a) hail storms _____ (b) destructive wind storms?_____ (c) heavy rains_____ (d) floods_____ (e) droughts _____

Other comments on climate _____

G. Inventory of Fences

External or line fences		Internal or division fences	
Rods in good condition		Rods in good condition	
Rods in fair condition		Rods in fair condition	
Rods in poor condition		Rods in poor condition	
Rods of new line fence needed		Rods of temporary fence in use	

General comments on fence _____

_____

_____

1. MAP OF FARM SHOWING DRAINAGE SYSTEM, AREAS SUBJECT TO FLOOD, AND LOCATION AND CONDITION OF FENCES

H. Inventory of Present Crop and Pasture System

MAJOR ROTATION

List crops in the rotation in order grown	Total acres of each crop raised in a complete rotation	Ave. acres of each crop raised per yr. in rotation
1st yr.		
2nd yr.		
3rd yr.		
4th yr.		

MINOR ROTATION

List crops in the rotation in order grown	Total acres of each crop raised in a complete rotation	Ave. acres of each crop raised per yr. in rotation
1st yr.		
2nd yr.		
3rd yr.		
4th yr.		

Summary of Present Crop and Pasture Program -

Crops and pasture	Average acreage per year	Soil Treatment per acre (lbs. fertilizer & loads manure)	3 yr. Ave. per A. yield		Average annual Production on this farm
			on this Farm	in this county	
Clean tilled crops- Corn					
Soybeans					
Small grain crops- Wheat					
Oats					
1st yr. sod crops- Hay, kind					
Hay, kind					
Rotation pasture					
2nd yr. sod crops- Hay, kind					
Hay, kind					
Rotation pasture					
3rd yr. sod crops- Hay, kind					
Rotation pasture					
Pasture on hay stubble					
Pasture on new seedings					
Permanent pasture					
Woods pasture					
Crops not harvested or pastured but plowed down					

Form 4366

The Soil Productivity Balance of Cropland

An engineering "yardstick" by which to measure the rate of rise or fall in the producing capacity of a farm's cropland. By it, all forces—good and bad—making up soil productivity, are reduced to a single over-all figure. The procedure is in terms of the individual farm's own conditions; the answer, arithmetic; its meaning usable, rendering the fate of cropland predictable.

	Sod Crop GRAZED or MOWED for Hay	ACRES a	FACTOR b	POINTS a x b
1	*Alfalfa, seeded 1 yr. before.....		+2.5	+
2	*Alfalfa, seeded 2 yrs. before....		+0.5	+
3	*Alfalfa, seeded 3 yrs. before....		0	0
4	*Common Clovers,seeded 1 yr.before		+2.0	+
5	Clov-tim.Mix. seeded 1 yr. before.		+1.25	+
6	Tim-clov.Mix. seeded 2 yrs. before		+0.25	+
7	Timothy, seeded 1 yr. before.....		+0.25	+
8	Timothy, seeded 2 yrs. before.....		0.	0
9	*Sweet Clover, seeded 1 yr. before		+3.0	+
10	(See Schedule A)		+	+
11	For RESTORATIVE CROPS Harvested...		.....	+

	Material NOT REMOVED from the Land	ACRES a	FACTOR b	POINTS a x b
12	Sweet Clover,MATURED, ungrazed this year...		+3.5	+
13	Sweet Clover, GREEN, plowed this year.....		+2.5	+
14	(See Schedule A)..		+	+
15	RESIDUES left on land from one year's crop: Corn stalk, soy and grain straw(Schedule A)		+0.25	+
16	Sum of CREDITS for Crop MANURE and RESIDUE.....			+

	CONTROLS and PROTECTIONS on Cropland	ACRES a	SLOPE b	FACTOR c	POINTS a x b x c
17	In SOD over winter and summer: (Items 11 plus 12).....		Item 31b	+1/10	+
18	In LIVE CROPS over winter only: (Item 26, 13,& 14 if applicable)...			+1/20	+
19	In ROW & SPRING DRILLED CROPS on CONTOUR and/or STRIPPED and/or TERRACED land (Items 25,27,28,29)..			+1/20	+
20	Credits for CONTROLS in operation against EROSION.....				+

	ADDED to SOIL during Crop Year	TONS a	FACTOR b	POINTS a x b
21	Fertilizer in terms of SINGLE Strength: (Item 21, Schedule C).....		+1.5	+
22	Manure produced on CROPLAND during GRAZING: (Item 22, Schedule B).....		+0.15	+
23	Manure produced in BARN and OPEN-LOT: (Item 23, Schedule B).....		+0.15	+
24	Sum of Credits for MANURE AND FERTILIZER.....			+

* Either straight stands or mixtures in which this legume constitutes 50 per cent or more (by weight) of the forage.

	ROW and DRILL Crops Harvested	ACRES a	FACTOR b	POINTS a x b
25	Corn, beet, tobacco, potato.....		-2.0	-
26	Rye, winter wheat, winter barley..		-1.0	-
27	Oats, spring wheat, spring barley.		-1.0	-
28	Soybean, as seed and/or hay.....		-0.5	-
29	(See ScheduleA)		-	-
30	For DEGRADING CROPS Harvested.....		.....	-

	Acres of all CROPLAND ON FARM (Items 11,12,14,30) a	Estimated SLOPE of all Cropland Ft. fall in 100 Ft b	FACTOR c	POINTS a x b x c
31			-1/10	-
32	Debits for EROSION assuming no controls.....			-

	WASTE of Manure	TONS a	FACTOR b	POINTS a x b
33	Manure produced in OPEN-LOT, subject to wasting (Item 33, Schedule B)....		-0.07	-
34	Debits for WASTE of Manure.....			-

SUMMARY

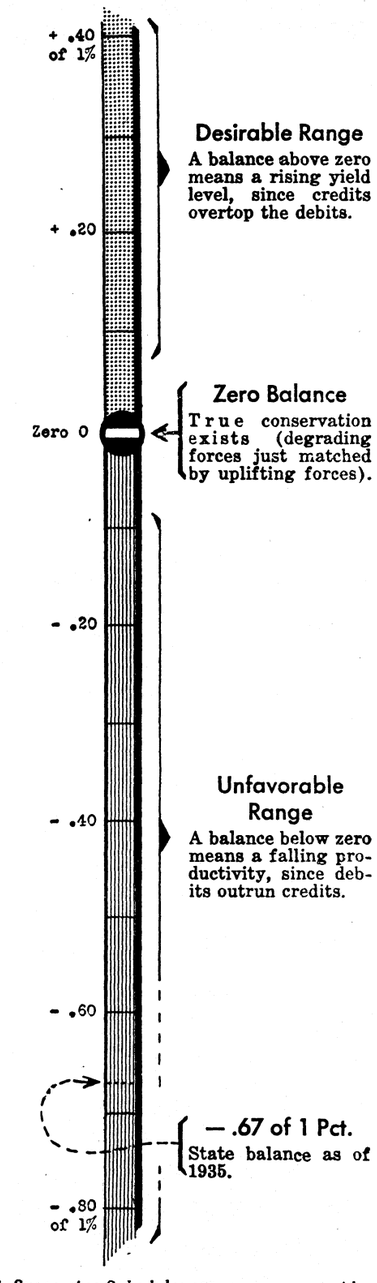
		+	-
35	CROPPING PATTERN (Items 11,30).....	+	-
36	CROP RESIDUE (Item 16).....	+	
37	CONTROL & EROSION (Items 20,32).....	+	-
38	MANURE & FERTILIZER (Items 24,34)...	+	-
39	GRAND TOTALS.....	+	-
40	NET of Totals.....		

41 (Net, Item 40) divided by (Cropland, Item 31a) equals ____ of 1 % SOIL PRODUCTIVITY BALANCE

Farm of_____

According to_____plan.

THE BALANCE SCALE



☞ *Supporting Schedules appear on reverse side.*

SCHEDULE A—Productivity Factors for Cropland

Item 10

FORAGE CROP AND SO USED	FACTOR
Brome grass	Same as timothy
Orchard grass	Same as timothy
Red top	Same as timothy
Lespedeza, annual	+0.5
Serica	+1.0

Item 14

GREEN CROP MANURE AND WINTER COVER CROP	FACTOR
Alfalfa, top growth left on land	+3.0
Clovers, common, top growth left on land	+2.7
Clover-timothy, top growth left on land	+2.0
Grasses, top growth left on land	+1.0
Serica, top growth left on land	+1.5
Timothy, top growth left on land	+1.0
Buckwheat, turned under green	+0.5
Cowpea, turned under green	+1.5
Crimson clover, turned under green	+1.0
Hubam clover, turned under green	+1.0
Corn, turned under at tasseling stage	+1.5
Soybean, turned under green	+1.5
Small grain cover crop, turned under or clipped	+0.5
Vetch, turned under green	+1.5

Item 15

CROP RESIDUE LEFT ON LAND	FACTOR
Beet tops	+0.25
Chaff, from combining alfalfa seed	+0.25
Chaff, from combining timothy seed	+0.25
Tomato vines	+0.25

Item 29

CROP HARVESTED OR GRAZED	FACTOR
Buckwheat	-1.5
Cabbage	-1.5
Canning pea	-0.5
Cowpea	-0.5
Cropland, fallowed	-0.5
Cropland, idle	0
Flax	-1.0
Fruit trees, cultivated	-2.5
Millet	-1.5
Onion	-2.0
Popcorn	-2.0
Rape	-1.5
Sorghums	-2.0
Sweet corn	-2.0
Sudan grass	-1.5
Tomato	-2.0
Vineyard, cultivated	-2.5

The Ohio State University and United States Dept. of Agriculture, Cooperating

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Agricultural College Extension Service, H. C. Ramsower, Director, Columbus, Ohio

SCHEDULE B—Tonnage of Manure Produced for Cropland

TO ESTIMATE the tonnage of manure available for Cropland in a single year, one of the two following methods may be employed.

Method I - Based on Estimated Loads Hauled (less accurate)

	Estimated acreage of CROPLAND SOD well grazed	
	About how many MONTHS so grazed during the year	
Item 22	Tonnage of MANURE directly on GRAZED Cropland (above acres x months x ½ ton)	
	*Estimated tonnage hauled from BARN or SHED	
Item 33	*Estimated tonnage hauled from OPEN LOT	
Item 23	Combined Tonnage from BARN and LOT (Sum of above)	

Method II - Based on Numbers of Livestock (more accurate)

GRAZED on Cropland SOD				KIND	Livestock in BARN & OPEN-LOT			
HEAD a	MONTHS IN FIELD b	TONS per Mo. per Hd. c**	TONNAGE of MANURE a x b x c		HEAD a	MONTHS Confined b	TONS per Mo. per Hd. c***	TONNAGE of MANURE a x b x c
		0.8		Horses & Mules			1.2	
		0.7		Cows kept			1.0	
		0.3		Young Cattle (not veal)			0.4	
		0.6		Beef Cattle fattened			0.8	
		0.3		Sows kept			0.4	
		0.06		Pigs fed out: raised &/or bought			0.12	
		0.08		Ewes kept			0.12	
		0.03		Lambs fed out: raised &/or bought			0.05	
		0.005		Poultry			0.01	

Item 22 On GRAZED Cropland

Item 23 Combined Tonnage in BARN & OPEN-LOT

OF the winter-produced Manure, about what FRACTION is normally produced in an OPEN-LOT: (✓)

All	4/5	2/3	1/2	1/3	1/4	1/5	0

Item 33 Tonnage of OPEN-LOT Manure (Above fraction x Item 23)

* Standard spreader = 1 ton; large size 1½ tons.

** Amounts (no bedding) have been adjusted to the equivalent of cattle manure.

*** Amounts (including bedding) have been adjusted to the equivalent of cattle manure as measured by crop-producing effect.

SCHEDULE C—Fertilizer Tonnage Applied to Cropland within a Single Crop Year

ON CROPLAND	ACRES TREATED a	WITH 0-20-0, 0-14-6, 0-10-10, 2-12-6, 4-10-6 etc. b	WITH 0-21-9, 3-18-9, 3-9-18 etc. c	WITH 0-44-0, 0-20-20, 4-24-12 etc. d	TOTAL AMOUNT Expressed as Single Strength: 1 x a x b or 1½ x a x c or 2 x a x d
		lbs./acre	lbs./acre	lbs./acre	lbs./yearly
Corn					
Wheat					
Oats, barley					
Beets, tobacco					
...					
Total on Cropland Yearly (in terms of Single Strength)					lbs.
Item 21 Expressed as Tons of Single Strength goods (lbs. ÷ 2000)					tons

SCHEDULE D—Residue from Crops and Bedding Needs

MATERIAL	ACRES Harvested a	Normal YIELD of GRAIN b	STRAW per bu. of Grain c	Estimated RESIDUE Produced a x b x c	
		bu./acre	lbs.	lbs.	
Soybean straw			110		
Wheat straw			100		
Oats straw			55		
Corn stover			55		
RESIDUE material produced (sum ÷ 2000)				tons	
BEDDING NEEDED by Livestock (Item 23 x 15%)				tons	
Item 15 NOT NEEDED for Bedding (Difference)				tons	acres

SCHEDULE E—Performance in Some Soil Practices

	Actual	Desirable
Average Rate of Manuring Each Acre Yearly (Item 22 plus 23 ÷ Item 31a)	tons	3 to 4
Average Rate of Fertilizing Each Acre Yearly (Item 21 x 2000 ÷ Item 31a)	lbs.	100 or up
Percent of Cropland Receiving Residue Yearly (Item 16 ÷ Item 31a)	%	20 to 40
Renewal of Soil Tilth: % of Cropland in Sod Yearly. (Item 17 ÷ Item 31a)	%	40 to 60

I. Inventory of Present Livestock System
1. Inventory of the dairy enterprise

Number and quality of dairy cattle on farm

Beginning Inventory Jan. 1____	Closing Inventory Jan. 1____	Individual Productive Ability	
List cows by name or number (Include all dry cows and cows and heifers producing milk at the time)		Butterfat test Percent	Estimated annual butter fat production, pounds
Total number listed above			
Number of all other dairy animals except veal calves kept for sale		XXXX	XXXXXX

Average number of cows in dairy herd (add the number on hand at the beginning inventory to the number on hand at the closing inventory and divide by two)_____

Quantity of butterfat produced during the year covered by the inventory -

(a) Pounds of butterfat sold during the 12 months period -

Jan. _____	Apr. _____	July _____	Oct. _____
Feb. _____	May _____	Aug. _____	Nov. _____
Mar. _____	June _____	Sept. _____	Dec. _____

Total pounds sold _____

(a) Total pounds sold (brought forward from bottom of preceding page) _____
(b) Pounds of butter fat fed in form of whole milk to calves raised during the 12 months period (Add 25 pounds of BF for each calf raised to 2 months of age on whole milk) _____
(c) Pounds of butterfat used as whole milk, cream & butter by people regularly on the farm during the period covered by the inventory. (Add 35 pounds per person including children) _____
(d) Total pounds of butterfat produced during the year (a + b + c) _____
(e) Average annual butterfat production per cow. (d ÷ Average No. cows) _____
(f) Average annual butterfat production per cow on farms with profitable herds 300 lbs. or more

Comments: On present feeding and management practices (these should cover - (a) contents of concentrate ration, (b) type & amount of dry roughage fed, (c) type & adequacy of pasture)

2. Inventory of hog enterprise

(a) Number of sows kept to farrow last spring (Dec. 1 to May 30) _____
(b) Number of sows kept to farrow last fall (June 1 to Nov. 30) _____
(c) Total number of expected litters (a + b) _____
(d) Number of last spring's pigs raised to date of sale or slaughter (exclude pigs purchased) _____
(e) Number of last fall's pigs raised to date of sale or slaughter (exclude pigs purchased) _____
(f) Total number of pigs raised exclusive of those purchased (d + e) _____
(g) Average number of pigs raised per litter per sow kept (f ÷ c) _____
(h) Ave. No. raised per litter to date of sale on well-managed farms 7 pigs or more

Comments: On present feeding & management practices. (These should cover - (a) contents of concentrate ration, (b) disease and parasite control, (c) pasture program, (d) market dates and wts.)

3. Inventory of beef enterprises

Number cows in breeding herd last spring____Number of calves raised to weaning _____
Percent calf-crop (calves raised ÷ cows in herd)_____% calf-crop in well-managed herds 95+
Number put on feed last year_____Ave. initial wt.____Days on feed_____Ave. sale wt. _____

Comments: On present feeding and management practices. (These should cover - (a) winter feeding program for breeding herd, (b) calving period, (c) adequacy of pasture, (d) fattening ration.)

4. Inventory of sheep enterprise

Number breeding ewes in flock last spring_____Number of lambs raised to weaning_____
% lamb-crop (lambs raised ewes in flock_____ % lamb-crop in profitable flocks (Med. w. 135%
Pounds of wool shorn_____ lbs. per fleece_____ (Fine w. 90%
Lambs put on feed last yr._____Ave. initial wt._____Days on feed_____Ave. sales wt._____

Comments; On present feeding and management program (These should cover - (a) winter feeding program for breeding flock, (b) type and adequacy of pasture, (c) parasite control, (d) fattening ration.)

5. Inventory of poultry enterprise

(a) number of hens and pullets in laying flock Oct. 1, last year _____
(b) Number that died were sold or consumed _____
(c) Number of birds in laying flock at the end of the year _____
(d) Average number of birds in laying flock during the year $\frac{(a + c)}{2}$ _____
(e) Dozens of eggs sold during the 12 months period -

Oct._____ Jan._____ Apr._____ July _____

Nov._____ Feb._____ May _____ Aug._____

Dec._____ Mar._____ June _____ Sept._____

(f) Dozens of eggs consumed by people regularly on the farm that were supplied eggs from the farm flock during the 12 months period (Add 25 dozen per person including children) _____
(g) Total "eggs" produced (e + f x 12) _____
(h) Egg production per hen (g ÷ d) _____
(i) Egg production per hen on farms with profitable flocks 150 or more
(j) Number of chicks purchased last spring _____
(k) Number that were sold and consumed on the farm _____
(l) Number that were placed in the laying flock this fall _____

Comments: On present feeding and management practices (These should cover - (a) contents of concentrate ration fed laying flock, (b) ration fed growing flock, (c) disease and parasite control practices, (d) type of range, (e) culling practice, (f) date chicks put in brooder.)

J. Inventory of Building Facilities, Present Condition and Adaptability

Type of Building	Size & capacity (bu., tons, head, etc.)	Equipped for & adaptable to (type of livestock)	Present condition (list major repairs needed)
Main dwelling house			
Tenant house			
Barns and attached sheds			
Machine Storage			
Small grain Storage			
Corn cribs			
Farrowing house or houses			
Poultry houses			
Garage & shop			
Silos			
Other buildings			

K. Inventory of Available Market Outlets -

Type of road past the farm - Hard surface_____, Gravel_____, Dirt_____
Is it an all year road for auto and truck?_____
Distance to (a) local shipping point _____; (b) established livestock market _____;
(c) established fruit and vegetable market_____.
Market outlets available for dairy products (a) Retail milk route_____;
(b) Fluid milk distributor_____; (c) Manufactured milk or cheese plant_____;
(d) Cream route_____; (e) Cream station_____
Market outlets available for poultry products (a) Retail_____
(b) Local buyer_____; (c) Auction_____
Market outlets available for special products (a) Sugar beet plant_____
(b) Canning factory_____; (c) Alfalfa hay dryer_____

Comments on markets:

• L. Inventory of machinery and Power now on the Farm

	Number	Size	Condition	Present utility value
Tractor (G.P.)				
Tractor plow				
Other plows				
Disk harrow				
Spring teeth harrow				
Spike tooth harrow				
Cultipacker or roller				
Corn planter				
Tractor cultivater				
Horse cultivators				
Grain drill				
Grain binder				
Mowing machine				
Side delivery rake				
Hay loader				
Manure spreader				
Wagons and racks				
Other equipment				
Other miscellaneous equipment				
Total Value				

M. Inventory of the Labor Supply

Supply now on farm that is available for work	Months per year	Permanence of present supply of family labor and certainty of obtaining hired labor
Operator		
Operator's wife		
Children of working age		
Other family labor		
Regular hired labor		

N. Inventory of Farm Capital and Income

1. Farm financial statement

Assets	Dollars	Liabilities	Dollars
Land and buildings		Real estate mortgages	
Power and equipment		Chattel mortgages	
Livestock		Accounts payable	
Feed and supplies		Other liabilities	
Cash and other assets		Total liabilities	
Total assets		Not worth	

Circle the amount of capital that is available for improvements in the farm program during the next 24 months -

$250 , $500 , $1000 , $1500 , $2500 , or $_____

2. Farm income from the present organization (turn to page 28 to compute)

	Price at which computed	
	Present	Long time ave.
Estimated gross cash receipts	$_____	$_____
Estimated expenses	$_____	$_____
Estimated annual income	$_____	$_____

II DIVIDING THE FARM INTO CROP, PERMANENT PASTURE, AND WOOD LAND

Type of Use	Present acreage	List changes considered desirable in the use of the land and give reasons	Revised acres
Cropland			
Permanent pasture			
Woodland			
Farmstead waste, etc.			

III SELECTING THE TYPE OF FARMING

Type of Farming or Enterprise Considered	Check if resource available is suitable and will be fully utilized by the type of farming or enterprise considered												Indicate if suitable or can be made so. List change needed
	Soil type	Topography	Drainage	Climate	Bldgs. and Fences	Power & Equipment	Capital	Market Outlets	Labor Supply & Skill	Ability & Experience	Size of Farm	Feed Crops	
General Crops -													
Corn											XXX	XXX	
Wheat											XXX	XXX	
Oats											XXX	XXX	
Soybeans											XXX	XXX	
Clover											XXX	XXX	
Alfalfa											XXX	XXX	
Special enterprises -													
Seed production											XXX	XXX	
Sugar beets											XXX	XXX	
Potatoes											XXX	XXX	
Tobacco											XXX	XXX	
Canning crops												XXX	
Purebred livestock													
Types of farming -													
Cash crops (no or little livestock)													
Dairy (fluid milk) and general crops													
Dairy (cream or mfg. milk) and gen'l crops													
Major livestock hogs with general crops													
Major livestock fat cattle with gen. crops													
Major livestock poultry with gen. crops													
Beef breeding herd with general crops													
Pasturing beef or sheep crops primarily hay													
General livestock and general crops													
Fruit farming													
Truck crop farming													

The best adapted types of farming (enterprise or combination of enterprises) for this farm are -

First choice _____ Second choice _____

Third choice _____

IV PLANNING THE NEW CROPPING SYSTEM

A. Proposed Crop Rotation

Major Rotation

List crops in the rotation in order grown	Total acres of each crop to be raised in a complete rotation	Ave. acres of each crop to be raised per yr. in rot.
1st yr.		
2nd yr.		
3rd yr.		
4th yr.		

Minor Rotation

List crops in the rotation in order grown	Total acres of each crop to be raised in a complete rotation	Ave. acres of each crop to be raised per yr. in rot.
1st yr.		
2nd yr.		
3rd yr.		
4th yr.		

B. Summary of Proposed System with Suggested Soil Treatment, Anticipated Yield and Total Production

Crops and Pasture	Average acreage per year	Soil treatment per acre (lbs. fertilizer & loads of manure)	Anticipated Average Yield per acre	Anticipated Average Annual total production
Clean tilled crops - Corn				
Soybeans				
Small grain crops - Wheat				
Oats				
1st yr. sod crops - Hay, kind				
Hay, kind				
Rotation pasture				
2nd yr. sod crops - Hay, kind				
Hay, kind				
Rotation pasture				
3rd yr. sod crops - Hay, kind				
Rotation pasture				
Pasture on hay stubble				
Pasture on new seedings				
Permanent pasture				
Woods pasture				
Crops not harvested or pastured but plowed down				

Form 4366

The Soil Productivity Balance of Cropland

An engineering "yardstick" by which to measure the rate of rise or fall in the producing capacity of a farm's cropland. By it, all forces—good and bad—making up soil productivity, are reduced to a single over-all figure. The procedure is in terms of the individual farm's own conditions; the answer, arithmetic; its meaning usable, rendering the fate of cropland predictable.

Farm of_____

According to_____plan.

	Sod Crop GRAZED or MOWED for Hay	ACRES a	FACTOR b	POINTS a x b
1	*Alfalfa, seeded 1 yr. before.....		+2.5	+
2	*Alfalfa, seeded 2 yrs. before....		+0.5	+
3	*Alfalfa, seeded 3 yrs. before....		0	0
4	*Common Clovers,seeded 1 yr.before		+2.0	+
5	Clov-tim.Mix. seeded 1 yr. before.		+1.25	+
6	Tim-clov.Mix. seeded 2 yrs. before		+0.25	+
7	Timothy, seeded 1 yr. before.....		+0.25	+
8	Timothy, seeded 2 yrs. before.....		0.	0
9	*Sweet Clover, seeded 1 yr. before		+3.0	+
10	(See Schedule A)		+	+
11	For RESTORATIVE CROPS Harvested...		.....	+

	Material NOT REMOVED from the Land	ACRES a	FACTOR b	POINTS a x b
12	Sweet Clover,MATURED, ungrazed this year...		+3.5	+
13	Sweet Clover, GREEN, plowed this year.....		+2.5	+
14	(See Schedule A)..		+	+
15	RESIDUES left on land from one year's crop: Corn stalk, soy and grain straw(Schedule A)		+0.25	+
16	Sum of CREDITS for Crop MANURE and RESIDUE.....			+

	CONTROLS and PROTECTIONS on Cropland	ACRES a	SLOPE b	FACTOR c	POINTS a x b x c
17	In SOD over winter and summer: (Items 11 plus 12).....		Item 31b	+1/10	+
18	In LIVE CROPS over winter only: (Item 26, 13,& 14 if applicable)...			+1/20	+
19	In ROW & SPRING DRILLED CROPS on CONTOUR and/or STRIPPED and/or TERRACED land (Items 25,27,28,29)..			+1/20	+
20	Credits for CONTROLS in operation against EROSION.....				+

	ADDED to SOIL during Crop Year	TONS a	FACTOR b	POINTS a x b
21	Fertilizer in terms of SINGLE Strength: (Item 21, Schedule C).....		+1.5	+
22	Manure produced on CROPLAND during GRAZING: (Item 22, Schedule B).....		+0.15	+
23	Manure produced in BARN and OPEN-LOT: (Item 23, Schedule B).....		+0.15	+
24	Sum of Credits for MANURE AND FERTILIZER.....			+

* Either straight stands or mixtures in which this legume constitutes 50 per cent or more (by weight) of the forage.

	ROW and DRILL Crops Harvested	ACRES a	FACTOR b	POINTS a x b
25	Corn, beet, tobacco, potato.....		-2.0	-
26	Rye, winter wheat, winter barley..		-1.0	-
27	Oats, spring wheat, spring barley.		-1.0	-
28	Soybean, as seed and/or hay.....		-0.5	-
29	(See ScheduleA)		-	-
30	For DEGRADING CROPS Harvested.....		.....	-

Acres of all CROPLAND ON FARM (Items 11,12,14,30) a	Estimated SLOPE of all Cropland Ft. fall in 100 Ft. b	FACTOR c	POINTS a x b x c	
		-1/10	-	31
Debits for EROSION assuming no controls.....				32

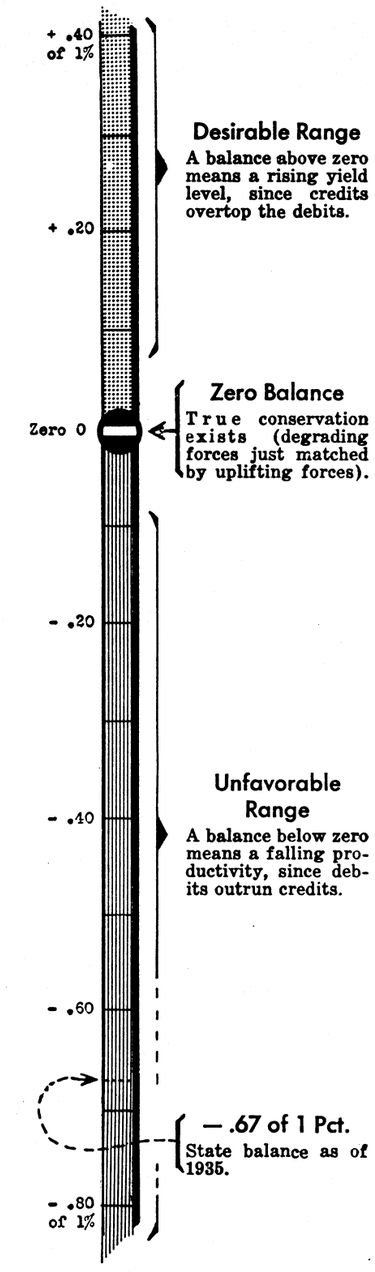
	WASTE of Manure	TONS a	FACTOR b	POINTS a x b
33	Manure produced in OPEN-LOT, subject to wasting (Item 33, Schedule B)....		-0.07	-
34	Debits for WASTE of Manure.....			-

SUMMARY

35	CROPPING PATTERN (Items 11,30).....	+	-
36	CROP RESIDUE (Item 16).....	+	
37	CONTROL & EROSION (Items 20,32).....	+	-
38	MANURE & FERTILIZER (Items 24,34)...	+	-
39	GRAND TOTALS.....	+	-
40	NET of Totals.....		

41 (Net, Item 40) divided by (Cropland, Item 31a) equals _____ of 1 %. SOIL PRODUCTIVITY BALANCE

THE BALANCE SCALE



☞ *Supporting Schedules appear on reverse side.*

SCHEDULE A—Productivity Factors for Cropland

Item 10

FORAGE CROP AND SOD USED	FACTOR
Brome grass	Same as timothy
Orchard grass	Same as timothy
Red top	Same as timothy
Lespedeza, annual	+0.5
Sericea	+1.0

Item 14

GREEN CROP MANURE AND WINTER COVER CROP	FACTOR
Alfalfa, top growth left on land	+3.0
Clovers, common, top growth left on land	+2.7
Clover-timothy, top growth left on land	+2.0
Grasses, top growth left on land	+1.0
Sericea, top growth left on land	+1.5
Timothy, top growth left on land	+1.0
Buckwheat, turned under green	+0.5
Cowpea, turned under green	+1.5
Crimson clover, turned under green	+1.0
Hubam clover, turned under green	+1.0
Corn, turned under at tasseling stage	+1.5
Soybean, turned under green	+1.5
Small grain cover crop, turned under or clipped	+0.5
Vetch, turned under green	+1.5

Item 15

CROP RESIDUE LEFT ON LAND	FACTOR
Beet tops	+0.25
Chaff, from combining alfalfa seed	+0.25
Chaff, from combining timothy seed	+0.25
Tomato vines	+0.25

Item 29

CROP HARVESTED OR GRAZED	FACTOR
Buckwheat	-1.5
Cabbage	-1.5
Canning pea	-0.5
Cowpea	-0.5
Cropland, fallowed	-0.5
Cropland, idle	0
Flax	-1.0
Fruit trees, cultivated	-2.5
Millet	-1.5
Onion	-2.0
Popcorn	-2.0
Rape	-1.5
Sorghums	-2.0
Sweet corn	-2.0
Sudan grass	-1.5
Tomato	-2.0
Vineyard, cultivated	-2.5

The Ohio State University and United States Dept. of Agriculture, Cooperating

•

Agricultural College Extension Service, H. C. Ramsower, Director, Columbus, Ohio

SCHEDULE B—Tonnage of Manure Produced for Cropland

TO ESTIMATE the tonnage of manure available for Cropland in a single year, one of the two following methods may be employed.

Method I - Based on Estimated Loads Hauled (less accurate)

	Estimated acreage of CROPLAND SOD well grazed	
	About how many MONTHS so grazed during the year	
Item 22	Tonnage of MANURE directly on GRAZED Cropland (above acres x months x ½ ton)	
	*Estimated tonnage hauled from BARN or SHED	
Item 33	*Estimated tonnage hauled from OPEN LOT	
Item 23	Combined Tonnage from BARN and LOT (Sum of above)	

Method II - Based on Numbers of Livestock (more accurate)

GRAZED on Cropland SOD				KIND	Livestock in BARN & OPEN-LOT			
HEAD a	MONTHS IN FIELD b	TONS per Mo. per Hd. c**	TONNAGE of MANURE a x b x c		HEAD a	MONTHS Confined b	TONS per Mo. per Hd. c***	TONNAGE of MANURE a x b x c
		0.8		Horses & Mules			1.2	
		0.7		Cows kept			1.0	
		0.3		Young Cattle (not veal)			0.4	
		0.6		Beef Cattle fattened			0.8	
		0.3		Sows kept			0.4	
		0.06		Pigs fed out: raised &/or bought			0.12	
		0.08		Ewes kept			0.12	
		0.03		Lambs fed out: raised &/or bought			0.05	
		0.005		Poultry			0.01	

Item 22 On GRAZED Cropland

Item 23 Combined Tonnage in BARN & OPEN-LOT

OF the winter-produced Manure, about what FRACTION is normally produced in an OPEN-LOT: (✓)

All	4/5	2/3	1/2	1/3	1/4	1/5	0

Item 33 Tonnage of OPEN-LOT Manure (Above fraction x Item 23)

* Standard spreader = 1 ton; large size 1½ tons.

** Amounts (no bedding) have been adjusted to the equivalent of cattle manure.

*** Amounts (including bedding) have been adjusted to the equivalent of cattle manure as measured by crop-producing effect.

SCHEDULE C—Fertilizer Tonnage Applied to Cropland within a Single Crop Year

ON CROPLAND	ACRES TREATED a	WITH 0-20-0 0-14-6 0-10-10 2-12-6 4-10-6 etc. b	WITH 0-21-9 3-18-9 3-9-18 etc. c	WITH 0-44-0 0-20-20 4-24-12 etc. d	TOTAL AMOUNT Expressed as Single Strength 1 x a x b or 1½ x a x c or 2 x a x d
		lbs./acre	lbs./acre	lbs./acre	lbs./yearly
Corn					
Wheat					
Oats, barley					
Beets, tobacco					
...					
Total on Cropland Yearly (in terms of Single Strength)					lbs.
Item 21 Expressed as Tons of Single Strength goods (lbs. ÷ 2000)					tons

SCHEDULE D—Residue from Crops and Bedding Needs

MATERIAL	ACRES Harvested a	Normal YIELD of GRAIN b	STRAW per bu. of Grain c	Estimated RESIDUE Produced a x b x c
		bu./acre	lbs.	lbs.
Soybean straw			110	
Wheat straw			100	
Oats straw			55	
Corn stover			55	
RESIDUE material produced (sum ÷ 2000)				tons
BEDDING NEEDED by Livestock (Item 23 x 15%)				tons
Item 15 NOT NEEDED for Bedding (Difference)				tons / acres

SCHEDULE E—Performance in Some Soil Practices

	Actual	Desirable
Average Rate of Manuring Each Acre Yearly (Item 22 plus 23 ÷ Item 31a)	tons	3 to 4
Average Rate of Fertilizing Each Acre Yearly (Item 21 x 2000 ÷ Item 31a)	lbs.	100 or up
Percent of Cropland Receiving Residue Yearly (Item 15 ÷ Item 31a)	%	20 to 40
Renewal of Soil Tilth: % of Cropland in Sod Yearly. (Item 17 ÷ Item 31a)	%	40 to 60

V PLANNING THE LIVESTOCK SYSTEM

If a new crop program is to replace an old one on a farm which is at present stocked, some revision in the type and number of livestock may be necessary. If no changes are made in the crop system some revisions in the livestock program may nevertheless be desirable. In planning a new or revising an old livestock program one must consider the type and amount of feed that a good soil maintaining cropping system will produce, buildings, supply of man labor available, market outlets, and the experience of the operator. Personal likes and dislikes are often costly to satisfy in regard to one's choice of livestock enterprises.

A. Type, Number, and Feed Required by the Proposed Program

List types of livestock and number of head of each included in the proposed program	List types of feed (grains, supplements, roughages, pasture, etc.) and amount to be fed annually											Pasture Requirements
Total feed required by proposed livestock												
Farm produced feed pasture available (see proposed crop plan)												
Surplus or deficit of farm feed and feed to be purchased												

B. Temporary Adjustments That Can Be Made in the Proposed Crop and Livestock Systems

1. In years of very unfavorable crop and pasture conditions - _____

2. In years of very favorable crop and pasture conditions - _____

VI PLANNING TO GET THE WORK DONE

A. Equipment and Power Needed to Put the Plan into Operation

1. Operations to be performed on crops and time available

List operations to be performed	Acres covered per operation by crops					Total Acres of each operation	Minimum work time available

2. Equipment required, size, & whether to be owned individually, jointly or hired

List equipment to be used	Size Required	Cost per unit of use	Owned Personally	Owned Jointly	To be hired	Check if now available for use

B. Man Labor Needed to Put the Plan into Operation

1. Man labor required annually to produce crops in the proposed plan (Form at top of next page)

The following is an illustration of the determination of the hours of man labor required to produce 10 acres of oats on farmer B's farm. Farmer B sows his oats on corn stalk ground without plowing. Instead he disks it once over and if any or all need to be gone over a second time he does so. On the average he disks one-half of the ground the second time. He generally attaches his cultipacker behind the disk and pulls them with his tractor, covering about 20 acres per day. He uses his two-horse drill to sow the oats and usually seeds 10 acres per day. To harvest the oats he uses a 7' grain binder drawn by the tractor which cuts at the rate of 16 acres per day. He has found that one man can shock about 7 acres of average oats per day and that some additional time must be allowed for re-shocking. The stationary thresher which he hires requires a crew of 14 men and threshes about 40 acres of average oats per day.

Operation	Acres Covered	Rate per 10 Hours	Total Hours
Double disk and cultipack 1½ times corn stalk ground - Tractor power	15	20 acres	8
Drill oats - 2 horses	10	10 acres	10
Cut oats with binder - Tractor power	10	16 acres	8
Shock and re-shock oats	10	7 acres	16
Thresh (14 men crew 28 cylinder machine)	10	40 acres	35
Total man hours required			77

1. Man labor required annually to produce crops in the proposed plan (continued)

List crops requiring man labor	Acres		Total man hours
Total Man Hours			

2. Man labor required annually to care for livestock in proposed plan

List livestock included in plan	Number	Man hours per unit	Total hours
Cows - fluid milk production		Hand milked 160 hrs. per yr. Machine milked 130 hrs. per yr.	
Cows - home use or cream production		Hand milked 130 hrs. per yr.	
Dairy replacement stock (calves, yearlings & 2 year olds)		25 hrs. per yr.	
Bulls, Dairy or Beef		Kept in bull pen 90 hrs. per yr. Kept with herd 49 hrs. per yr.	
Beef breeding herd - Brood cows Growing & replacement stock		30 hrs. per yr. 15 hrs. per yr.	
Beef cattle on feed		2 hrs. per month on feed	
Sheep breeding flock Medium wools Fine wools		6 hrs. per yr. 4 hrs. per yr.	
Lambs on feed		hrs. per month on feed	
Brood sows - Less than 5 per farm 5 or more per farm		45 hrs. per yr. 35 hrs. per yr.	
Pigs (weaning to 220 lbs.) less than 35 per farm 35 or more per farm		6 hrs. per pig 5 hrs. per pig	
Poultry - Laying Flock - Commercial Flocks Small Farm Flocks		Per bird 2.0 hrs. per yr. Per bird 1.6 hrs. per yr.	
Chickens raised		Per 100 chicks started 30 hrs.	
Horses		90 hrs. per yr.	
Total man hours	XXX	XXX	

3. Total man labor required annually and the hours available

Type of Work	Total Hours
Labor on crop enterprises (see form top of page)	
Labor on livestock enterprises (see form above)	
Total labor required for crop and livestock enterprises	
Total maintenance and miscellaneous labor (1)	
Total labor required to operate the farm	
Total family labor now available	

(1) Maintenance & miscellaneous labor requires approximately 1 hour for each 3 hours spent on crops & livestock.

4. Distribution of man labor required for crops and livestock

MONTH	Hours per period on crop and livestock enterprises											Total labor on crops and livestock	Total labor available	Labor Available for Misc. work
Jan.														
Feb.														
Mar.														
Apr.														
May														
June														
July														
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														
Total														

Total man labor required for all types of work_____ hours. Total labor available_____ hours.

Annual surplus or deficit_____ hours.

VII DETERMINING THE PROBABLE RECEIPTS EXPENSES AND FARM INCOME

A. Annual Receipts Under Old Organization & Those Anticipated Under New Plan When "Fully" Established

Products	Quantity available for sale		Price per Unit		Receipts (dollars)		
	Old Organization Units	New Plan Units	Present Price	Long time average	Old organization with Present Price	Old organization with Long time Ave. price	New plan with long time Ave. price
Dairy products					$	$	$
Dairy cattle							
Veal calves							
Beef cattle							
Lambs							
Wool							
Market hogs							
Eggs							
Poultry							
Crops							
Misc. income							
Total receipts	XXX	XXXX	XXX	XXX	$	$	$

B. Annual Expenditures Under Old Organization & Those Anticipated Under New When "Fully" Established

Product or Service	Quantity required for operation		Price per unit		Expenditure (dollars)		
	Old Organization Units Used	New Plan Units Used	Present Price	Long time average	Old organization with Present Price	Old organization with Long time Ave. price	New plan with long time Ave. price
Labor hired							
Feed purchased							
Seeds & plants							
Sub-totals carry forward	XXX	XXX	XXX	XXX	$	$	$

B. Expenses (continued from preceeding page)

Product or Service	Quantity required for operation		Price per unit		Expenditure (dollars)		
	Old Organization Units Used	New Plan Units Used	Present Price	long time Average	Old Organization with Present Price	New plan with long time Ave. price	long time Ave. price
Sub-totals proceeding pg.	XXX	XXXX	XXX	XXX	$	$	$
Fertilizer							
Lime							
Fuel & oil							
Twine, etc.							
Threshing							
Combining							
Baling							
Corn picking							
Veterinarian							
Farm share automobile							
Farm share light & phone							
Livestock purchased							
Chicks purchased							
Taxes Real & personal							
Insurance fire & wind							
Insurance Industrial							
Average annual cost for repairs, improvements and replacements on							
A - Machinery, tractors, tools, etc.							
B - Buildings, fences, drains, wells, etc.							
Total annual expense					$	$	$
Farm income (receipts less expenses)							
Deduct interest & debt payments							
Remainder available for family living					$	$	$

VIII PUTTING THE NEW PLAN INTO OPERATION

A. Steps to be taken the "first" year and a map showing changes

(1) _____ (5) _____

(2) _____ (6) _____

(3) _____ (7) _____

(4) _____ (8) _____

B. Steps to be taken the "second" year and a map showing changes

(1) _____ (5) _____

(2) _____ (6) _____

(3) _____ (7) _____

(4) _____ (8) _____

C. Steps to be taken the "third" year and a map showing changes

(1) _____ (5) _____

(2) _____ (6) _____

(3) _____ (7) _____

(4) _____ (8) _____

D. Steps to be taken the "fourth" year and a map showing changes

(1) _____ (5) _____

(2) _____ (6) _____

(3) _____ (7) _____

(4) _____ (8) _____