

A

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AN ECONOMIC STUDY  
OF  
FIRE CURED TOBACCO FARMING  
IN  
APPOMATTOX COUNTY, VIRGINIA  
IN  
1936



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## INTRODUCTION

In September, 1935, the Soil Conservation Service established a demonstration area in the Wreck Island Creek Watershed of Appomattox County, Virginia. In order to secure information as to the farm practices followed in the area, the Soil Conservation Service and the Virginia Agricultural Experiment Station conducted a farm management survey of the area during the summer of 1936, covering the 1935 farm business. This survey was repeated in the summer of 1937, covering the 1936 farm business. The records of the 1936 farm business are the basis of this study.

The data were secured by the survey method, by trained enumerators. A total of 135 records were taken, of which 2 were discarded because they were too small to be classed as farms, and 23 were omitted because 30 percent or more of the total business receipts were obtained from non-farm sources. The remaining 110 form the basis for this study.

The purposes of this study were to show conditions in the area for the year 1936, determine and measure the importance of factors affecting income, and to make comparisons, where possible, with the results of the 1935 study.<sup>1/</sup>

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<sup>1/</sup> The analyses of the records for 1935 were published in An Economic Study of Farming in Appomattox County, Virginia, by W. L. Gibson. Va. Agr. Expt. Sta. Bul. 511. 1937.

### ECONOMIC CONDITIONS

In general, farm prices fluctuate more violently than do the more strictly wholesale and retail prices. This causes periods of disparity between farm prices and prices paid by farmers for commodities purchased. For the period 1917 to 1920 the index of Virginia farm prices (1910-14 = 100) was 205 while the index of commodities purchased was 132 (table 1). The purchasing power of farm prices, in terms of commodities purchased, was 15 percent above pre-war ( $205 \div 132 \times 100 = 113$ ). From 1921 to 1929 both prices received and prices paid remained comparatively stable, with the purchasing power of Virginia farm products varying from 91 to 99 percent of pre-war except in 1921 and 1922, when it was 82 and 89 percent, respectively. After 1929 a drastic decline occurred in farm prices as compared to prices of commodities purchased by farmers. From 1929 to 1932 the index of farm prices dropped from 151 to 71 while the index of commodities purchased dropped from 133 to 107. The purchasing power of Virginia farm prices in 1932 was 66 percent of pre-war. Prices began to rise again in 1933, but the purchasing power of Virginia farm prices did not return to pre-war levels until 1936, when it averaged 103. This was the first time that the purchasing power of Virginia farm prices had been as high as pre-war since 1920.

Prices received by farmers in the area studied in 1936 were below the state average for tobacco, wheat, hay, and eggs, but above the state average for corn, milk, and butter (table 2). Since tobacco was the main crop sold and its purchasing power in the area was lower than the state average, conditions were evidently not as favorable in the area as for the state as a whole.



Table 1.- Comparison of the index of Virginia farm prices to the wholesale price of all commodities and to the index of prices paid for commodities purchased by farmers, 1917-1936 <sup>1/</sup>

Year	Index (1910-14 = 100)									
	Whole- sale prices of all commod- ities	Va. farm prices	Prices paid by farmers for commodities purchased							Purch- asing power of Va. farm prices <sup>2/</sup>
			All commod- ities	Fer- ti- lizer	Mach- inery	Seed	Feed	Commod- ities used in pro- duction	Commod- ities used for family mainten- ance	
1917-1920 avg.	198	205	182	169	152	193	181	173	189	115
1921-1928 avg.	144	148	153	130	151	165	152	144	160	97
1929	141	151	153	130	153	186	145	147	158	99
1930	126	120	145	126	152	174	132	140	148	83
1931	107	89	124	115	150	152	93	122	126	72
1932	95	71	107	99	141	102	69	107	100	66
1933	96	87	109	96	137	95	79	108	109	80
1934	109	104	123	104	143	127	100	123	122	85
1935	117	111	126	102	148	154	111	126	124	89
1936	118	128	124	96	149	142	112	126	122	103

<sup>1/</sup> Adapted from Virginia Farm Economics, No. 39, February, 1936, page 621.

<sup>2/</sup> Purchasing power in terms of prices paid for commodities purchased by farmers.

Table 2.- Comparison of 1936 farm prices in the area studied to Virginia farm prices in 1936 and 1910-14

Product	Unit	Average farm price in area studied	Average 1936 Va. farm price	Average 1910-14 Va. farm price	Average price received by farms studied		Purchasing power of 1936 Va. farm price	Purchasing power of 1936 area farm prices
					In per-cent of 1936 Va. price	In per-cent of 1910-14 Va. farm price		
Tobacco	lb.	\$ 0.125	\$ 0.132	\$ 0.077	95	162	138	131
Wheat	bu.	1.06	1.07	1.02	99	104	85	84
Corn	bu.	1.07	0.83	0.74	129	145	90	117
Hay	ton	12.00	13.74	16.28	87	74	62	59
Milk	100 lb.	2.48	2.45	2.09	101	119	94	95
Butter	lb.	0.249	0.25	0.23	108	108	81	87
Eggs	doz.	0.204	0.219	0.22	93	93	81	75



DESCRIPTION OF THE AREA

Location

Appomattox is a Piedmont Plateau County, located in south-central Virginia. It belongs to the geographic division known as Middle Virginia. The County is bounded on the northwest by the James River, on the west and southwest by Campbell County, on the southeast by Prince Edward and Charlotte counties, and on the northeast by Buckingham County. The area studied, the Wreck Island Creek Watershed, is located in the northwestern part of the county, between the James River and the U. S. Highway No. 460, bounded on the east by Virginia State Highway No. 26 and on the west by the Appomattox-Campbell County line.

Topography

The topography in the area is rolling to hilly and is cut by numerous streams, with less bottom land than is generally found along the streams of the Piedmont Plateau. Owing to the steepness of the topography the area is subject to severe erosion, even under conditions of moderate rainfall.

Soils

The soils of the area are mainly residual, being formed from the underlying rocks. Sericite schists are the main rocks found in the area. These contain a large amount of silica, making them acidic rocks, producing acidic soils. Some basic rocks, diorite and gabbro, are found in small

6.

quantities. Soils formed from these rocks are less acidic than those formed from schists. In general, the soils formed from the basic rocks are more productive than those formed from acidic rocks.

The following soil series have been identified in the area:

Derived from acidic rocks: Appling, Cecil, Durham, Louisa, Madison, Tatum, Warshan, and York.

Derived from basic rocks: Davidson, Iredell, and Pitt.

Derived from mixed rocks: Helena and Wilkes.

Terraced or second bottom soils: Altavista and Wickham.

Stream bottom or first bottom soils: Meadow, Congaree, and Wehadkee.

A total of 18 soil series and 30 soil types, not including the stony, gravelly, colluvial and shallow phases, have been found in the area. The acidic rock series predominate, with Tatum the most important. Tatum loam is the most important soil type.

The soil in the area has been severely eroded. Relatively little land has not experienced some erosion. In many cases as much as 75 percent or more of the top soil has been removed. The majority of the area used for crops has had 50 percent or more of the top soil removed by erosion.

#### Climate

The climate in the area is temperate, with relatively short winters which are characterized by frequent changes in temperature. The average frost-free season is 202 days, the last killing frost in the spring occurring about April 8, and the first in the fall about October 27. The mean,



annual temperature is 57° F. and the average precipitation about 40 inches annually (table 3).

Table 3.- Temperature and rainfall data for area studied

Month	Lynchburg data <sup>1/</sup>				S.C.S. rainfall data for 1936 <sup>2/</sup>	
	Temperature		Rainfall		Gauge at G. C.C. Camp	Gauge at Mr. Osbourne Davidson's
	Normal	1936	Normal	1936	No. 10	
January	57.5	52.4	5.36	9.46		
February	40.4	34.6	5.12	5.89		
March	47.5	51.4	5.52	7.48		
April	57.3	54.0	3.10	4.54	5.01	
May	67.3	66.9	3.52	1.23	0.79	
June	74.6	73.6	5.80	4.64	8.27	
July	77.5	79.8	5.97	5.07	0.65	2.07
August	75.6	77.8	5.99	5.95	2.19	1.32
September	69.0	71.6	5.51	4.64	3.16	5.30
October	58.5	60.2	3.14	3.93	(no report)	1.80
November	47.2	46.2	2.52	0.66	0.60	0.50
December	39.5	40.9	3.05	5.35	3.95	4.60
Annual	57.6	57.7	40.40	54.94		

<sup>1/</sup> Climatological data had been recorded at the Lynchburg station for 65 years previous to 1936. Normal figures used were based on previous records of the station.

<sup>2/</sup> The rain gauge at the G.C.C. Camp was installed April 1, 1936. The rain gauge at Mr. Davidson's was installed June 17, 1936.

The nearest climatological station to the area is at Lynchburg, about 10 miles west of the area studied. Since the altitude at Lynchburg is about the same as the average for the area, the average temperature and precipitation for a long period should also be about the same, as for the area, although perhaps differing in individual years.

Contrary to the normal expectation over a period of years, the climatological data at Lynchburg did not represent conditions in the area studied for 1936. Rainfall at Lynchburg was 14.5 inches above normal,



while all reports it was possible to secure indicated that weather conditions were very unfavorable to farming in the area studied.

The frost free season for 1936 was much shorter than usual. The last killing frost in the spring occurred April 23 and the first in the fall October 28, giving a season of 188 days as compared to the average of 202 days. The late spring made it difficult for the farmers to get their tobacco planted and obtain a normal stand. Rainfall was considerably below normal and varied greatly over the area. These records were obtained from the Soil Conservation Service at Appomattox, Virginia. Experiment Station reports on the J. R. Horsley farm state that very little rain fell there from July 1 to November 1. Experiment Station workers who were taking farm management records in the area during August and September state that except for a few light showers, there was no general rain during the whole time of their stay in the area. There was not enough rain at any time to make the roads slippery. However, in a few small localized areas, hard rains were reported. The C.C.C. Camp reports give a total of 8.27 inches of rain for June. A large part of this fell at one time and only on a small area around the camp. In general, the rainfall in the area was so limited that crops suffered and yields were cut severely due to the drought. Farmers in the area stated that the season was one of the worst in several years.

#### Transportation

No railroad crosses the Wreck Island Creek Watershed, but the main line of the Norfolk and Western railroad is located along the southern boundary and the Chesapeake and Ohio railroad is across the James River

from the area. The average distance of all farms from the railroad station used was 6.5 miles. Of the 110 farms, 33 were from 1 to 4 miles, 45 were from 5 to 7.5 miles and 32 were 8 miles or more from the railroad station that was used.

No hard surfaced roads pass through the area but it is bordered on the south by U. S. Highway No. 26. The roads within the area are either dirt or have been bedded with loose, crushed rock. Most of the main roads are well maintained, although a few in the northwest section become almost impassable at times in the winter and spring. The average distance from the farm to the nearest hard road was 4.6 miles. Of the 110 farms, 8 were located on a hard road, 25 were .5 to 2.5 miles, 37 from 3 to 5 miles, 27 from 5.5 to 8 miles, and 13 were 9 or more miles from the hard road.

#### Markets

The tobacco grown in the area was sold in Lynchburg. With that exception, most of the farmers used Appomattox, or the small community stores as trading centers. A few traded in Lynchburg, especially when buying farm equipment and fertilizers. Few products except tobacco were sent out of the area in which they were produced.



## DESCRIPTION OF FARMS

Capital

Farm capital, as used in this study, included fixed capital invested in land and buildings, and working capital, or livestock, machinery, equipment, feed, and supplies. The average total capital per farm was \$7,044, of which \$5,580, or 79.2 percent, represented real estate and \$1,464, or 20.8 percent, represented working capital (table 4).

About 25 percent of the total capital was invested in crop land, 17.7 percent in operator's dwelling, 14.8 percent in other buildings, and 21.6 percent in other land. Livestock investments averaged \$633 per farm, accounting for 9 percent of the total capital.

The total capital investment varied from \$1,546 to \$33,469. About two-thirds of the farms had an investment of \$2,000 to \$8,000 (table 5). Four farms had an investment of less than \$2,000.

The total investment in 1936 was lower than the 1935 figure of \$7,833. The greater part of the difference was in fixed capital. The 1935 figure was \$6,462 as compared to \$5,580 in 1936. A part of this difference was due to the fact that one large estate included in the 1935 study was omitted in 1936, but after allowing for this, there was still considerable difference in the capital investment for the two years. Apparently the farmers valued their real estate lower in 1936 than in 1935. The ratio of fixed to working capital was less in 1936. Fixed capital was 82.5 percent of the total in 1935. The change in proportion was largely due to the smaller value of fixed capital in 1936, although working capital increased slightly from one year to the next.

Table 4.- Distribution of capital investment - 110 farms in Appomattox County, 1936

Items	Average investment per farm	Average investment per acre	Percent of total investment
<b>Fixed Capital (real estate):</b>			
Operator's dwelling	\$1,849	\$ 5.60	17.7
Tenant houses (other)	395	1.70	5.5
Main barns	437	2.00	6.2
Other buildings	221	1.0	3.1
Crop land	1,755	8.0	25.1
Other land	1,523	6.9	21.6
<b>Total Fixed Capital</b>	<b>\$5,580</b>	<b>\$25.2</b>	<b>79.2</b>
<b>Working Capital:</b>			
Livestock	\$ 633	\$ 2.9	9.0
Machinery and equipment	357	1.6	5.1
Feed and supplies	474	2.1	6.7
<b>Total Working Capital</b>	<b>\$1,464</b>	<b>\$ 6.6</b>	<b>20.8</b>
<b>Total of all Capital</b>	<b>\$7,044</b>	<b>\$31.8</b>	<b>100.0</b>

Table 5.- Variations in total farm capital - 110 farms in Appomattox County, 1936

Total capital investment	Number of farms	Percent of farms
Less than \$2,000	4	3.6
\$2,000 - \$3,999	30	27.3
4,000 - 5,999	24	21.8
6,000 - 7,999	19	17.3
8,000 - 9,999	8	7.3
10,000 - 11,999	10	9.1
12,000 - 13,999	7	6.4
14,000 - 15,999	4	3.6
16,000 - 17,999	1	0.9
18,000 - 19,999	1	0.9
20,000 or more	2	1.8
<b>Total</b>	<b>110</b>	<b>100.0</b>



### Tenancy

Most of the farms studied were owner-operated, since only 14 tenants and 15 part-owners (owning some land and renting additional acreage) were included among the 110 farms (table 6). Of the 24,403 acres of land operated, 87.3 percent was owned by the operator. Only about 14 percent of the land used for crops was farmed by tenants.

Table 6.- Land ownership - 110 farms in Appomattox County,  
1936

Tenure	No. of oper- ators	Acres owned	Acres rented			Total acres oper- ated
			Cash	\$ share	\$ share	
Owned	81	19,477	-	-	-	19,477
Owned & rented for $\frac{1}{2}$ share	13	1,680	-	341	-	1,921
Owned & rented for $\frac{1}{3}$ to $\frac{1}{2}$ share	1	70	-	2.5	12.5	92
Owned and rented for cash	1	80	12	-	-	92
Rented for $\frac{1}{2}$ share	10	-	-	1,994	-	1,994
Rented for $\frac{1}{3}$ share	1	-	-	-	450	450
Rented for cash	3	-	394	-	-	394
<b>Total</b>	<b>110</b>	<b>21,507</b>	<b>406</b>	<b>2,227.5</b>	<b>462.5</b>	<b>24,403</b>
<b>Percent</b>	<b>-</b>	<b>87.3</b>	<b>1.7</b>	<b>9.1</b>	<b>1.9</b>	<b>100.0</b>

### Size of Farm

The average size of the 110 farms studied was 221.8 acres (table 7). Total acres operated varied from 30 to 1,100. More than one-half of the farms were less than 200 acres in size, 40.9 percent ranged from 100 to 199 acres, and 13.7 percent from 50 to 99 acres (table 8). Three farms had less than 50 acres. Only 5 were larger than 500 acres.



Table 7.- Land utilization - 110 farms in Appomattox County, 1936

Kind of land	Total	Number	Average	Average	Percent
	of all farms	of farms	of farms	of all farms	of total acres
	Acres	having	having	Acres	acres
Total acres of crops	6,416.7	110	58.3	58.3	26.5
Double cropped	119.5	15	9.2	1.1	0.5
Land used for crops	6,297.2	110	57.2	57.2	25.8
Woods not pastured	9,776.9	99	98.8	88.9	40.1
Woods pastured	1,771.8	61	29.0	16.1	7.2
(Open equivalent)	297.1		4.7	2.6	
Permanent pasture	3,853.7	106	36.4	35.0	15.8
(Acres tillable)	2,893.5		27.3	26.3	11.9
Buildings, yards, roads, etc.	579.0	110	5.5	5.5	1.6
Other land <sup>1/</sup>	2,324.4	80	29.1	21.1	9.5
<b>Total</b>	<b>24,403</b>	<b>110</b>		<b>221.8</b>	<b>100.0</b>

<sup>1/</sup> The average acreage of other land includes 9.2 acres of idle crop land, 9.8 acres of brush land, and 2.1 acres of cliff, swamp, and waste land.

Table 8.- Distribution of farms by size, 110 farms, Appomattox County, 1936

Area in acres	Number of farms	Percent of farms
Less than 50 acres	3	2.7
50 - 99	15	13.7
100 - 149	22	20.0
150 - 199	25	20.9
200 - 249	9	8.2
250 - 299	12	10.9
300 - 349	12	10.9
350 - 399	3	2.7
400 - 449	2	1.8
450 - 499	4	3.6
500 or more	5	4.6
<b>Total</b>	<b>110</b>	<b>100.0</b>

Since many of the farms were the same for which records were taken the year before, there was little difference in the average size for the two years. The average size of farms studied in 1935 was 224.7 acres.

#### Land Utilization

Of the total, 57.2 acres, or 25.8 percent of the land was used for crops (table 7). Woods constituted 47.5 percent of the farm acreage. Woodland pasture averaged 16 acres per farm, equivalent to 2.6 acres of open pasture, and permanent pasture averaged 35 acres. Buildings, yards, roads, etc., accounted for 3.5 acres per farm. Land not used for any purpose averaged 21.1 acres per farm. Of this amount, 9.2 acres were classed as idle crop land, 9.8 acres as brush land, and 2.1 acres as cliffs, swamps, and other waste land. In addition to the land classed as idle crop land a large part of the brush land was probably former crop land that had been abandoned for cultivation.

The main differences between the records for 1935 and those for 1936 were in the acres in crops and open pasture. In 1935 the average acres in crops was 51.2, or 6 acres less than in 1936. In 1935 the average acres in open pasture was 44.5, or 9.5 acres more than in 1936. The increase in acres of crops in 1936 was probably due to an increase in the acreage of lespedeza.



### Crop Acreages and Fields

The average total acres of crops per farm was 56.34; 57.24 acres were used for crops (table 9). Dark fire-cured tobacco was by far the most important cash crop grown. Of the 110 farms, 106 grow tobacco, averaging 5.68 acres per farm. This represented 9.59 percent of the total crop acres. The average yield per acre was 720 pounds. Corn for grain was grown by 109 farms and was the next most important crop, averaging 12.65 acres per farm or 21.63 percent of the total crop acres. The average yield of corn was 22.9 bushels per acre. Corn silage was grown on 4 farms.

Wheat for grain was grown on 102 farms, averaging 9.8 acres per farm or 16.8 percent of the total crop area. The average yield of wheat was 12.9 bushels per acre. Other small grains threshed, rye, oats, and barley, averaged 5.7 acres per farm. In addition to the wheat and other small grains threshed, small grains not harvested averaged 0.52 acre per farm and small grains fed unthreshed or harvested for hay averaged 0.2 acre.

Total hay cut averaged 6.89 acres of hay per farm. The importance of these hays according to acreage were: lespedeza, clover, clover and timothy, and other hay mixtures. In addition, hay not harvested or pastured because of dry weather averaged 16.37 acres. Lespedeza was the most important, averaging 14.25 acres per farm. Lespedeza was too short to be mowed, and in most cases it was not fenced, so it could not be pastured.

Truck crops and green manure crops were of very little importance. Orchards averaged 1.21 acres per farm. Most of these were for home use

Table 9.- Crop summary - 110 farms - Appomattox County - 1956

Crops <sup>1/</sup>	Farms growing			All farms (110)		
	Num- ber	Percent	Acres per farm	Percent of crop acres	Acres per farm	Yield per acre
Tobacco	106	96.36	5.68	9.39	5.48	720 <sup>1/2</sup>
Corn: Grain	109	99.10	12.76	21.68	12.55	22.9 bu.
Stover	107	97.27	12.43	20.72	12.09	
Silage	4	3.64	8.50	0.53	0.51	5.2 T.
Wheat: Threshed	108	92.72	10.87	16.80	9.80	12.9 bu.
Oats, threshed	5	4.55	3.60	0.28	0.16	
Rye, threshed	2	1.82	2.30	0.08	0.05	
Barley, threshed	12	10.91	3.29	0.62	0.36	
Straw	102	92.72	11.08	17.61	10.27	0.4 T.
Oat hay and oats unthreshed	7	6.36	2.86	0.31	0.18	
Small grains not harvested	11	10.00	5.12	0.89	0.52	
Sorghum	1	0.91	1.00	0.02	0.01	
Truck crops	5	4.55	1.70	0.12	0.08	
Total Soil-Depleting				50.73	29.60	
Alfalfa hay	4	3.64	3.00	0.19	0.11	1633 <sup>1/2</sup>
Clover hay	36	32.73	7.11	3.99	2.33	1238 <sup>1/2</sup>
Clover hay and seed	2	1.82	4.00	0.12	0.07	
Clover seed	11	10.00	8.23	1.41	0.82	
Clover and timothy	10	9.09	11.70	1.82	1.66	
Lespedeza hay	42	38.18	7.24	4.73	2.76	1502 <sup>1/2</sup>
Lespedeza hay and seed	1	0.91	6.00	0.09	0.05	
Lespedeza seed	31	28.18	6.24	3.02	1.76	
Other hay harvested	12	10.91	4.63	0.87	0.51	
Other hay not harvested	6	5.45	13.57	1.27	0.74	
Lespedeza not harvested	81	73.64	19.36	24.44	14.36	
Clover not harvested	13	11.82	11.58	2.33	1.37	
Green manure crops	6	5.45	2.67	0.23	0.13	
Lespedeza pasture	6	5.45	11.00	1.03	0.60	
Other pasture	5	4.55	20.60	1.61	0.94	
Total Soil-Conserving				47.19	27.53	
Fruit, bearing (orchard)	73	66.18	1.78	2.08	1.21	
Fruit, non-bearing (orchard)	4	3.64				
Fruit, bearing (scattered trees)	12	10.91				
Fruit, non-bearing (scattered trees)	1	0.91				
Total, all crops	110	100.0		100.0	58.34	
Double cropped	15	11.82			1.1	
Acres used for crops	110	100.0			57.2	

<sup>1/</sup> Acreage of crop residue not included in total.

and were given very little attention.



According to the classification used by the Agricultural Conservation program, soil depleting crops averaged 29.6 acres and soil conserving crops 37.5 acres per farm. Of the soil depleting crops, 18.5 acres were in row crops, of which corn was the most important.

When the crop summary for 1936 was compared with the summary for 1935 (table 10), the major differences were those in yields and in the percent of hay acreage harvested. Average yields in 1935 were 870 pounds of tobacco, 37.7 bushels of corn, 16.1 bushels of wheat per acre, with other crops in proportion. In 1935, 80 percent of the hay acreage was harvested, as compared to only about 50 percent in 1936. The proportion of soil depleting crops declined 11.2 percent from 1935 to 1936, owing partly to increased seeding of lespedeza on acreage not used for crops in 1935, and partly to a reduction in the proportion of soil depleting crops on the acreage that was used in 1935.

#### Crop Receipts

Crop receipts were divided into sales and non-cash receipts. Non-cash receipts included transfers of landlords' or croppers' shares to other farms, threshing tolls, and feed grinding tolls. Sales averaged \$523.62 and other receipts \$32.66, making a total receipt from crops of \$556.28 (table 11). Tobacco accounted for 63 percent of the total cash sales. On many farms tobacco was the only crop sold. Corn was next in importance in both cash and non-cash receipts, averaging \$57.70 or 9.21 percent of the total crop receipts. Wheat ranked third in importance, averaging \$34.03, or 8.62 percent of the total crop receipts. The remainder of crop receipts were from truck crops, seed, roughage, and other



Table 10.- Summary of the principal crops grown - Appomattox  
County - 1935 - 127 Farms

Crops	Number of farms growing	Average acres per farm (all farms)	Percent of crop area (all farms)	Average yield per acre
<b>Soil-depleting crops:</b>				
Tobacco	123	5.9	11.5	370 lbs.
Corn for grain	125	13.6	26.6	27.7 bu.
Stover <sup>1/</sup>	123	13.1	-	0.8 ton
Corn silage	3	0.2	0.4	9.9 tons
Wheat, threshed	120	10.2	19.9	16.1 bu.
Other small grains (threshed)	31	1.1	2.1	24.6 bu.
Straw <sup>1/</sup>	120	11.3	-	0.6 ton
Truck crops	16	0.2	0.4	-
Small grains for hay	4	0.1	0.2	0.4 ton
<b>Total Soil-Depleting Crops</b>		<b>51.5</b>	<b>61.1</b>	
<b>Soil-Conserving Crops:</b>				
Lespedeza hay	94	7.2	14.1	(109 lbs. seed 0.77 ton hay)
Clover hay	63	5.2	10.1	(24 lbs. seed 0.84 ton hay)
Clover and timothy hay	24	3.1	6.0	1.19 tons
Alfalfa hay	8	0.5	1.0	1.46 tons
Other hay	12	0.6	1.2	1.35 tons
Lespedeza not harvested or pas- tured	37	4.1	8.0	-
Other hay crops not harvested	5	0.1	0.2	-
Green manure crops	5	0.1	0.2	-
Lespedeza pasture	14	1.5	2.9	67 A.U.D. <sup>2/</sup>
Other pasture crops	2	0.2	0.4	27 A.U.D.
<b>Total Soil-Conserving Crops</b>		<b>22.6</b>	<b>44.1</b>	
<b>Orchards:</b>				
Apples, bearing	80	0.8	1.6	21 bu.
Other fruits, bearing	18	0.1	0.2	34 bu.
Apples, non-bearing	4	<sup>3/</sup>	<sup>3/</sup>	
<b>Total All Crops</b>	<b>127</b>	<b>54.8</b>	<b>107.0</b>	
Acres double-cropped or inter- cropped	38	3.6	7.0	
Acres used for crops	127	51.2	100.0	

<sup>1/</sup> Acreage of crop residues are not included in the total acres.

<sup>2/</sup> Animal unit days of full forage.

<sup>3/</sup> Less than 0.05 acres and less than 0.05 percent.

miscellaneous items. Crop receipts represented 64 percent of the total farm receipts.

An important difference in crop receipts between 1935 and 1936 was that whereas receipts from wheat remained about the same, receipts from corn more than doubled, even though less corn was produced in 1936. In 1935 the average corn production was 377 bushels per farm and in 1936 it was 290 bushels per farm, yet only 35.9 bushels were sold per farm in 1935 while 54.8 bushels were sold in 1936. Of the 35.9 bushels sold in 1935, 27.1 bushels went as cash sales and 8.8 bushels as non-cash sales. Of the 54.8 bushels sold in 1936, 42.6 bushels went for cash sales and 12.2 bushels for non-cash sales. In 1935 the average price received for corn was 68 cents, while the 1936 price was \$1.07.

#### Farm Practices on Crops

Practically all of the seed used was home grown. If farmers did not grow their own seed they exchanged with their neighbors.

Since relatively few livestock were kept the amount of manure produced was not very great. Most of the manure was spread on corn and tobacco land.

An average of \$77 worth of purchased fertilizer was used per farm (table 12). Twice as much fertilizer was used on tobacco per acre as on any other crop. Corn received the lightest application since a larger part of the manure produced was spread on the corn land. All small grains were fertilized and nearly all tobacco. Only 60 percent of the corn crop was fertilized.



Table 11.- Receipts from crop sales - 110 farms - Appomattox County - 1936

Products	Average receipts from crops					Average price of products sold for cash
	Cash sales per farm	Percent of cash receipts	Non-cash receipts	Total receipts from crops per farm	Percent of total crop receipts	
Tobacco	\$493.70	83.17	-	\$493.70	78.85	\$0.125 (lb.)
Corn	45.65	7.69	\$12.05	57.70	9.21	1.07 (bu.)
Wheat	42.74	7.20	11.29	54.03	8.62	1.06 (bu.)
Lespedeza seed	3.11	.52	2.60	5.71	.91	
Truck crops	4.32	.73	-	4.32	.69	
Clover seed	1.24	.21	2.85	4.07	.65	
Stover	1.33	.22	2.40	3.73	.60	
Straw	.22	.04	.72	.94	.15	
Barley	.46	.08	.39	.85	.14	
Hay	.76	.13	.05	.79	.13	
Sorghum	-	-	.24	.24	.04	
Fruit	.09	.01	-	.09	.01	
Oats	-	-	.06	.06	.01	
Rye	-	-	.05	.05	.01	
<b>Total</b>	<b>\$593.62</b>	<b>100.00</b>	<b>\$32.66</b>	<b>\$626.28</b>	<b>100.00</b>	

Table 12.- Summary of fertilizer and lime used on crops on 110 farms in Appomattox County, Virginia, 1936

Crop	Acres covered	Percent of total acres of crops	Total pounds used	Pounds per acre covered	Total cost
<b>Fertilizer:</b>					
Tobacco plant bed	-	-	26,680	-	545
Tobacco field	590.4	98	280,870	476	3,554
Corn - grain	837.0	60	137,650	164	1,327
Wheat	1,144.0	100	240,050	210	2,209
Other small grains, harvested	65.0	100	14,500	230	154
Pasture	210.0	-	44,200	210	600
Other crops	45.0	-	10,650	237	114
Garden	-	-	14,520	-	185
Total	2,859.4		769,120		8,486
Average per farm (all farms)	26.3		6,992	260	77
<b>Lime:</b>					
Tobacco: burnt	4	1.7	2,000	500	9
ground	6		20,000	3,333	17
Corn: burnt	14	5.7	2,600	186	13
ground	66		147,200	2,239	162
Wheat: burnt	36	43	36,000	1,000	104
ground	460		1,326,000	2,883	1,631
Other small grains: burnt	-	52	-	-	-
ground	55		80,000	2,424	103
Pasture: burnt	-	-	-	-	-
ground	392		1,006,000	2,571	1,252
Other crops: burnt	-	-	-	-	-
ground	45		97,000	2,256	102
Total: Burnt	54.0		40,600	752	126
Ground	1,000.0		2,678,200	2,679	3,267
Ground equivalent	1,054.0		2,718,474	2,610	3,393
Average (all farms)					
Ground equivalent	9.6		25,013		306

An average of \$306 worth of lime was used per farm. The rate of application of burnt lime varied from 186 to 1000 pounds per acre and of ground limestone from 2256 to 3333 pounds per acre. Tobacco received the largest application per acre, but small grain received the greatest total amount in proportion to the acreage grown. Most of the lime used was applied in the form of ground limestone.



### Livestock

The average value of livestock for the total farm was \$647 (table 13). This was divided as follows: operator \$608.61, landlord \$16.23 and cropper \$22.52. In addition to the average value of livestock kept on the farm, the average net appreciation of livestock transactions was \$274.54. This net appreciation figure was calculated by subtracting the beginning inventory plus purchases from ending inventory plus sales plus animals butchered for use. The total farm appreciation was divided as follows: operator \$245.53, landlord \$2.93 and cropper \$26.08.

The highest livestock investment was in work animals, amounting to \$294.91 per farm. The farms averaged 1.8 head of work horses and .36 head of work mules per farm. Dairy cattle were next in importance, the average investment being \$161.76. Dairy cows made up most of this and were kept on 104 farms. The average investment in beef cattle was \$97.50. Poultry was kept on all but one farm and the average investment was \$53.73. The average investment in hogs was \$23.83.

The highest net appreciation was in hogs, averaging \$122.22 per farm. This consisted of fattening hogs used on the farm and weaned pigs sold. Chickens were next highest, averaging \$71.05. Dairy and beef cattle were about the same, averaging \$41.85 and \$40.41, respectively. Bees were kept on only 12 farms and goats on one.

Table 13.- Inventories and appreciation of livestock on 110 farms in Appomattox County, 1936

Kind of livestock	Total Farm				Operator			
	Farms* having	Average per farm (all farms)		Appre- ciation	Farms having	Average per farm (all farms)		Appre- ciation
		Inventory Number	Value			Inventory Number	Value	
Dairy cows	104	3.31	\$131.34	\$ 8.50	99	2.89	\$116.43	\$ 8.50
Heifers - over 1 yr.	36	0.61	16.80	9.46	37	0.59	16.43	8.75
Heifers - under 1 yr.	50	0.51	8.31	0.29	29	0.50	8.13	0.65
Veals	9	0.22	2.98	22.54	16	0.19	2.68	19.45
Bulls	8	0.07	2.33	1.04	8	0.07	2.33	1.04
Total Dairy		4.72	161.76	41.85		4.24	146.00	38.39
Beef cows	12	1.04	45.50	1.41	11	0.95	41.68	1.77
Heifers - over 1 yr.	5	0.27	9.23	9.18	5	0.27	9.23	9.18
Heifers - under 1 yr.	5	0.15	3.15	-2.15	3	0.13	2.79	-2.88
Calves	6	0.25	5.22	5.77	6	0.25	5.22	5.36
Bulls	7	0.06	4.09	-0.50	6	0.05	3.54	-0.50
Steers - 1-2 yrs.	15	0.52	11.29	-4.58	15	0.48	10.35	-5.56
Steers - 2-3 yrs.	14	0.35	15.18	30.73	14	0.35	15.18	30.73
Steers - 3 or more yrs.	1	0.07	3.64	0.55	1	0.07	3.64	0.55
Total Beef		2.71	97.30	40.41		2.55	91.65	38.65
Horses	93	1.80	204.55	-9.91	93	1.79	204.27	-9.91
Mules	38	0.58	73.95	-3.50	37	0.53	67.77	-3.50
Horse colts	14	0.14	13.61	11.41	14	0.14	13.61	11.41
Mule colts	1	0.01	0.80	0.23	1	0.01	0.80	0.23
Total Work Animals		2.53	294.91	-1.77		2.47	286.45	-1.77
Goats	1	0.27	1.36	-	1	0.27	1.36	-
Brood sows	42	0.53	13.68	4.15	40	0.51	13.25	3.89
Boars	5	0.04	1.18	0.21	5	0.04	1.18	0.21
Fattening hogs	26	0.76	8.78	112.94	23	0.64	7.62	93.48
Pigs	34	0.91	5.19	4.92	31	0.79	4.52	7.76
Total Hogs		2.24	28.85	122.22		1.98	26.57	107.34

-continued.



Table 13.- Concluded.

Kind of livestock	Total Farm (All farms)				Operator Average per farm (all farms)			
	Farms* having	Average per farm Inventory		Appre- siation	Farms having	Inventory		Appre- siation
		Number	Value			Number	Value	
Hens and pullets	109	59.18	\$ 53.69	\$ 20.90	107	53.09	\$ 47.30	\$ 18.39
Fryers and broilers	106	-	-	50.54	-	-	-	44.04
Chicks	-	-	-	-0.50	-	-	-	-0.50
Turkeys	1	0.01	0.04	0.21	1	0.01	0.04	0.21
Total Poultry		59.19	53.75	71.05		53.10	47.34	62.14
Bees	12	1.23	9.26	0.78	12	1.23	9.26	0.78
Total Livestock			647.15	274.54			606.61	245.33

\* Farms having, refers to the number of farms having an inventory for the various types of livestock.

### Livestock Products Sold

The average value of all livestock products sold on the 110 farms was \$106.14 per farm (table 14). Products sold in order of their importance were: eggs, butter, milk, cured pork, honey, cream, buttermilk, and breeding fees. The average value of eggs sold per farm was \$42.47. Dairy products amounted to \$46.21, butter sales accounting for 55 percent of this figure. Livestock products sold represented 10.9 percent of the total farm receipts.

The value of livestock products sold in 1936 and in 1935 was almost exactly the same, the 1935 figure being \$106.63 as compared to \$106.14 in 1936. The same products were sold and in about the same proportion. There was a little more cream sold in 1935, but less whole milk and butter. In 1935 the figures were: butter \$23.90, whole milk \$15.74, cream \$9.71, and buttermilk \$0.53, making a total of \$49.88 for dairy products.

### Farm Receipts

The average total receipts per farm were \$976.34 (table 15). Receipts from crops amounted to \$626.25 or 64 percent of the total receipts. Tobacco receipts alone were \$493.70 or 50.57 percent of the total farm receipts. On many farms tobacco was the only crop sold, and on nearly all farms it was the most important source of receipts. Livestock was next in importance, accounting for about 25 percent of the total receipts. Dairy cattle and dairy products were the most important items of livestock



Table 14.- Livestock products sold - 110 farms - Appomattox County - 1936

	Number of farms having	Average sales per farm						Percent of total sales
		Farms having			All farms (110)			
		Amount	Price	Value	Amount	Price	Value	
Eggs	101	226.6 doz.	\$ .204	46.26	208.0 doz.	\$ .204	42.47	40.0
Butter	70	159.2 lbs.	.249	39.67	101.3 lbs.	.249	25.24	23.7
Whole milk	8	59,827.5 lbs.	.025	971.00	71,322.7 lbs.	.025	17.65	16.6
Cured pork	50	226.3 lbs.	.201	45.43	61.7 lbs.	.201	12.39	11.7
Honey	2	1,750.0 lbs.	.150	262.50	51.8 lbs.	.150	4.77	4.5
Cream	5	456.7 lbs.	.229	100.00	11.9 lbs.	.229	2.73	2.6
Buttermilk	1	260.0 gal.	.250	65.00	2.4 gal.	.250	.59	0.6
Breeding fees	4	7.8 (No.)	1.000	7.75	.3 (No.)	1.000	.30	0.3
<b>Total</b>							<b>106.14</b>	<b>100.0</b>

Table 15.- Distribution of farm receipts, 110 farms, Appomattox County, 1936

Source	Total for all farms	Average amount per farm	Percent of total receipts
Milk and other products	5,004	46.22	4.73
Veals sold	1,922	17.47	1.79
Other dairy cattle increase plus breeding fees	2,672	24.29	2.49
<b>Total Dairy</b>	<b>9,678</b>	<b>87.98</b>	<b>9.01</b>
Beef cattle	4,445	40.41	4.14
Hogs	3,069	28.03	2.88
Poultry	4,279	38.90	3.98
Eggs	4,672	42.47	4.35
Other*	416	3.79	.39
<b>Total Livestock</b>	<b>26,579</b>	<b>241.63</b>	<b>24.75</b>
Tobacco	54,507	493.70	50.57
Other crops	14,581	132.55	13.37
<b>Total Crops</b>	<b>69,088</b>	<b>626.25</b>	<b>64.14</b>
Man, team and machine work off the farm	2,525	21.13	2.17
Forest products	1,137	10.34	1.06
Soil Conservation payments	8,163	74.21	7.60
Other: Rent of building, stock board and pasture	306	2.73	.28
<b>Total Miscellaneous</b>	<b>11,931</b>	<b>108.46</b>	<b>11.11</b>
<b>Total</b>	<b>107,398</b>	<b>976.34</b>	<b>100.00</b>

\* Includes work stock and bees, plus honey sold. There was a net return of \$611 on bees plus honey sold, but a loss of \$195 on workstock.

receipts and eggs ranked second. Miscellaneous receipts accounted for 11.11 percent of the total. Soil Conservation payments were the most important source of miscellaneous receipts.

Total receipt varied from \$78 to \$4365. On 57 farms, or 51.8 percent of the total number of farms, the total farm receipts were less than \$300 for the year (table 16).



Table 16.- Variation in farm receipts, 110 farms,  
Appomattox County, 1936

Receipts	Number of farms	Percent of farms
Less than \$300	3	2.7
300 - 599	19	17.3
600 - 899	20	18.2
900 - 1199	15	13.6
1200 - 1499	10	9.1
1500 - 1799	10	9.1
1800 - 1999	9	8.2
2000 - 2199	5	4.5
2200 - 2399	5	4.5
2400 - 2599	1	0.9
2600 - 2799	2	1.8
2800 - 2999	1	0.9
3000 or more	2	1.8
	3	2.7
<b>Total</b>	<b>110</b>	<b>100.0</b>

Average total receipts for 1935 were \$1,045 per farm. This was \$69 more than the receipts for 1936 (table 17). The main difference between the two years was that there was a feed and supplies increase of \$94 per farm in 1935 and none in 1936. This increase a little more than accounted for the difference in total receipts for the two years.

Table 17.- Distribution of receipts - Appomattox  
County, 1935 - 127 farms

Source	Average amount per farm	Percent of total receipts
Milk and other dairy products	\$ 50	4.8
Veals	24	2.3
Other dairy cattle increase	21	2.0
<b>Total Dairy</b>	<b>95</b>	<b>9.1</b>
Beef cattle	56	5.4
Work animals and colts	3	0.3
Hogs	24	2.3
Sheep, lambs and wool	1/	2/
Poultry and eggs	86	8.2
Bees	2	0.2
<b>Total Livestock</b>	<b>245</b>	<b>23.5</b>
Tobacco	497	47.6
Other crops	142	13.6
<b>Total Crops</b>	<b>639</b>	<b>61.2</b>
Man, team and machine work off the farm	9	0.8
Forest products	7	0.7
Other miscellaneous	50	4.8
<b>Total Miscellaneous</b>	<b>66</b>	<b>6.3</b>
Feed and supplies increase	94	9.0
<b>Total Receipts</b>	<b>1,045</b>	<b>100.0</b>

1/ Less than 50 cents.

2/ Less than 0.05 percent.

#### Farm Expenses

##### Total

The average total expenses for the 110 farms studied was \$908.76 (table 18). Labor expenses (excluding the operator's time) were the greatest, amounting to \$393.31 or 43.3 percent of the total expenses. Labor expense included the value of unpaid family labor and board, the



Table 18.- Distribution of expenses - 110 farms - Appomattox  
County - 1936

Item	Total for all farms	Average per farm	Percent of total expenses
Hired labor and board	\$ 8,532	\$ 77.56	8.5
Cropper labor and board	14,484	131.67	14.5
Unpaid labor and board	20,248	184.08	20.3
<b>Total Labor (except operator)</b>	<b>43,264</b>	<b>393.31</b>	<b>43.3</b>
Fertilizer and lime	11,879	107.99	11.9
Seeds and plants	1,966	17.87	2.0
Threshing and sorghum toll	1,566	14.24	1.6
Tobacco hauling	551	4.83	.5
Miscellaneous crop expenses	425	3.84	.4
<b>Total Crop Expense</b>	<b>16,365</b>	<b>148.77</b>	<b>16.4</b>
Feed purchased	4,506	40.97	4.5
Miscellaneous livestock expenses	790	7.12	.8
<b>Total Livestock Expense</b>	<b>5,296</b>	<b>48.15</b>	<b>5.3</b>
Hired machinery	563	5.30	.5
Auto, truck and tractor	5,575	50.68	5.6
Machinery repairs	1,208	10.98	1.2
Miscellaneous (depreciation, gas, oil, etc.)	4,498	40.89	4.5
<b>Total Machinery Expense</b>	<b>11,844</b>	<b>108.85</b>	<b>11.6</b>
Building expense	6,242	56.74	6.2
Taxes	4,348	39.53	4.4
Fences, drains, lumber sawing, clearing land, etc.	1,114	10.15	1.1
<b>Total Real Estate</b>	<b>11,704</b>	<b>106.40</b>	<b>11.7</b>
Feed, seed and supply decrease	9,788	88.98	9.8
Other expenses	1,905	17.30	1.9
<b>Total Expenses</b>	<b>99,964</b>	<b>908.76</b>	<b>100.0</b>

value of cropper labor and board, and the cost of hired labor and board. The only cash outlay was for hired labor.

Since tobacco and other crops were the most important farm enterprises, crop expenses ranked second in importance. The average crop ex-

pense was \$146.77, or 16.4 percent of the total expense. Fertilizer and lime accounted for a little more than two-thirds of the crop expenses. Real estate expenses, largely for buildings and taxes, amounted to \$106.40. Farm machinery expenses averaged \$105.85 per farm. Auto, truck, and tractor expenses, and machinery depreciation accounted for most of the machinery expense. Feed-and-supply decreases averaged \$88.98 per farm. Livestock expenses were \$48.15. Most of the livestock expenses were for purchased feed.

### Current

Current expense is the actual operating expense. It includes all expenses except value of operator's time, interest, and inventory decreases. The average current expense was \$722.81. The lowest current expense was \$63 and the highest was \$3,996 (table 19). Approximately two-thirds of the farms had current expenses less than the average. The total current expense on 59 farms was less than \$600, on 33 farms it was between \$600 and \$1200, on 11 farms it was between \$1200 and \$1800, on 5 farms it was between \$1800 and \$2400, and on 2 farms it was over \$2400.

Average total farm expenses for 1935 (table 20) were \$771, which was \$38 less than the average for 1936. The greater part of the difference was in two items, feed and supplies, and machinery expenses. In 1935 there was no feed, seed and supply decrease and the value of purchased feed was only \$34. The value of feed, seed and supply decrease plus feeds purchased in 1936 was \$150. Due to the drought, grain and hay yields and total production was much less in 1936 than in 1935. Of the average of 23.3 acres of hay land per farm in 1936 only 6.9 acres were cut,



Table 19.- Variations in Current Expenses - 110 farms - Appomattox County - 1936

Expenses	Number of farms	Percent of farms
Less than \$200	16	14.6
\$200 - \$399	30	27.3
400 - 599	13	11.8
600 - 799	13	11.8
800 - 999	10	9.1
1000 - 1199	10	9.1
1200 - 1399	6	5.5
1400 - 1599	4	3.6
1600 - 1799	1	0.9
1800 - 1999	2	1.8
2000 - 2199	2	1.8
2200 - 2399	1	0.9
2400 or more	2	1.8
Total	110	100.0

and the average yield per acre cut was only about 1500 pounds.

The average machinery expense in 1935 was \$70 per farm as compared to \$106 in 1936, a difference of \$36. Most of this increased machinery expense consisted of two items: auto, truck, and tractor expenses, and machinery depreciation.

Table 20.- Distribution of expenses - 127 farms - Appomattox  
County - 1955

Items	Average amount per farm	Percent of total expenses
Hired labor and board	\$ 95	12.3
Cropper labor and board	123	16.0
Unpaid labor and board (except operator)	196	25.4
<b>Total labor (except operator)</b>	<b>414</b>	<b>53.7</b>
Fertilizer and lime	73	9.4
Seeds, plants and trees	16	2.1
Threshing	26	3.6
Tobacco hauling	7	0.9
Miscellaneous crop expenses <u>1/</u>	2	0.5
<b>Total crop expenses</b>	<b>126</b>	<b>16.5</b>
Purchased feed	34	4.4
Miscellaneous livestock expenses <u>2/</u>	7	0.9
<b>Total livestock expenses</b>	<b>41</b>	<b>5.3</b>
Hired machines	6	0.8
Auto, trucks and tractors	33	4.3
Machinery repairs	11	1.4
Miscellaneous machinery expenses <u>3/</u>	20	2.6
<b>Total machinery expenses</b>	<b>70</b>	<b>9.1</b>
Building expenses <u>4/</u>	67	8.7
Taxes	41	5.3
Fences, drains, etc.	10	1.3
<b>Total real estate expenses</b>	<b>118</b>	<b>15.3</b>
Other expenses	2	0.3
<b>Total expenses</b>	<b>771</b>	<b>100.0</b>

1/ Includes expenses for twine and spray materials.

2/ Includes expenses for cow testing, registration fees, breeding fees, veterinary, medicine, stock pasturage and feed grinding. Decreases in value of livestock are not included, as they were deducted from increases in calculating receipts.

3/ Net decreases in inventories and coal, oil and gasoline used for farm machinery other than auto, truck and tractor.

4/ Net decreases in inventories plus repairs, supplies and insurance.



### Profits

The measures of profits used in this study were: farm income, labor income, labor earnings, and return on capital. Farm income is the amount left to pay for operator's labor and the use of farm capital, after total expenses have been subtracted from total receipts. Labor income is the returns to operator's labor after total expenses and interest on the investment have been subtracted from total receipts, or farm income — interest on average investment. (Interest was figured at 5 percent on real estate and 6 percent on working capital). Labor earnings is the labor income plus the value of farm products furnished. Return to capital is what is left to pay for capital after total expenses and value of operator's time are subtracted from total receipts. It is the farm income minus the value of operator's time.

The average total farm income for the 110 farms was \$67.58 (table 21). The average labor income was \$-297.37. The average total labor earnings were \$364.61. The average return on capital was \$-413.56, which was divided into \$-549.76 for operator, \$15.91 for landlord and \$189.50 for cropper.

There was considerable variation in labor income and labor earnings on the farms (tables 22 and 23). The lowest labor income was \$-2997 and the highest was \$1596. Nearly 73 percent of the farms had a minus labor income. Only one farm had a labor income of over \$1000. The lowest labor earnings was \$-2463 and the highest was \$2621. One-fifth of the farms had a minus labor earning. About one-eighth had labor earnings of \$1000 or more.

Table 21.- Farm profits - 110 farms - Appomattox County - 1936

Measure of profit	Average per farm
Average capital	\$ 7,012.94
Total receipts	976.34
Total expenses	908.76
Farm income (returns to capital and operator's labor)	67.58
Interest on average capital (5% on real estate and 6% on working capital)	364.95
Labor income	-297.37
Value of farm privileges	661.98
Labor earnings	364.61
Value of operator's time	431.14
Return on capital	-413.56
Percent return on capital	-5.9

Table 22.- Variation in labor income - 110 farms - Appomattox County - 1936

Labor income	Number of farms	Percent of farms
Less than \$-1600	5	4.5
\$-1600 to \$-1401	1	.9
-1400 to -1201	2	1.8
-1200 to -1001	2	1.8
-1000 to -801	4	3.6
-800 to -601	8	7.3
-600 to -401	8	7.3
-400 to -201	21	19.1
-200 to -1	29	26.4
0 to 199	17	15.5
200 to 399	6	5.5
400 to 599	3	2.7
600 to 799	1	.9
800 to 999	2	1.8
1000 or more	1	.9
Total	110	100.0



Table 23.- Variation in labor earnings, 110 farms, Appomattox County, 1936

Labor earnings	Number of farms	Percent of farms
Less than \$-500	4	3.6
\$-500 to \$-401	4	3.6
-400 to -201	4	3.6
-200 to -1	10	9.1
0 to 199	18	16.4
200 to 399	13	11.8
400 to 599	23	20.9
600 to 799	12	10.9
800 to 999	6	5.5
1000 to 1199	7	6.4
1200 to 1399	2	1.8
1400 to 1599	2	1.8
1600 or more	3	2.7
Total	110	100.0

The average value of farm products furnished, which is a part of labor earning, was \$661.99 (table 24). This was divided into \$337.06 for operator, \$3.80 for landlord and \$101.13 for cropper. The average value of products furnished per person at the operator's table was \$97.72. Livestock products (dairy products being the most important) made up 44 percent of the total products furnished. Crops accounted for 27 percent of the total products furnished. The remainder consisted mostly of the rental value of the dwelling. The average decline in farm profits from 1935 to 1936 was \$206.33 in return to capital and operator's time, \$166.12 in labor income, and \$294.93 in labor earnings (table 23).

Table 24.- Farm products furnished per farm and per person at operator's table

Products	Average value per farm			Average per person at operator's table	
	Total	Operator	Land-lord Cropper		
<b>Livestock products:</b>					
Milk	\$ 106.13	\$ 91.15	\$ -	\$ 16.97	\$ 15.99
Butter	29.65	26.46	-	5.39	4.64
Eggs	25.25	21.79	-	5.46	5.82
Poultry	52.16	27.07	.14	4.95	4.75
Pork	94.53	78.24	-	16.29	13.73
Beef	.36	.36	-	-	.06
Honey	1.67	1.67	-	-	.29
Total livestock	291.94	246.74	.14	45.06	45.28
<b>Crops:</b>					
Wheat	43.09	53.80	-	9.29	5.93
Corn	14.42	10.71	-	5.71	1.83
Garden (and potatoes)	116.19	100.69	-	15.50	17.66
Sorghum	.24	.24	-	-	.04
Fruit	7.22	6.99	-	.23	1.23
Total crops	181.16	152.43	-	28.73	26.74
<b>Other:</b>					
Rent	152.64	128.26	3.66	20.72	22.50
Wood	36.25	29.63	-	6.62	5.20
Total other	188.89	157.89	3.66	27.34	27.70
<b>Total</b>	<b>661.99</b>	<b>557.06</b>	<b>3.80</b>	<b>101.13</b>	<b>97.72</b>

Table 25.- Farm profit, 127 farms, Appomattox County, 1935\*

Measure of profit	Average per farm
Average capital	\$7,233.00
Total receipts	\$1,058.72
Total expenses	784.61
Farm income (return to capital and operator's labor)	274.11
Interest on capital (3% on real estate & 6% on working)	405.36
Labor income	-151.25
Value of farm privileges	826.79
Labor earnings	659.54
Value of operator's time	450.32
Return on capital	-176.41
Percent return on capital	-2.23

\* Data calculated from 1935 material.



Farm Homes and Conveniences

The average value of operator's dwelling was \$646. The lowest value was \$150 and the highest was \$3000 (table 26). Only 11 operators' dwellings were valued more than \$2300. The average value of other dwellings, landlord's and tenant's, was \$300, or a little less than half the value of the operator's dwelling. Many of the tenant houses were in very poor condition.

**Table 26.- Variation in value of operator's dwelling, 110 farms, Appomattox County, 1936**

Value of operator's dwelling	Number of farms	Percent of farms
Less than \$300	2	1.9
\$300 - \$799	32	29.6
800 - 1299	28	25.9
1300 - 1799	16	14.8
1800 - 2299	19	17.6
2300 - 2799	4	3.7
2800 - 3299	4	3.7
3300 - 3799	2	1.9
3800 or more	1	.9
<b>Totals</b>	<b>108*</b>	<b>100.0</b>

\* Two tenant farms had no operator's dwelling. The tenants lived in houses off the farms and the main dwellings on the farms were occupied by the landlords.

Of the main dwelling on the 110 farms, 108 were frame and 2 were log (table 27). Only 3 farms had electricity, 2 of which were Delco plants. Only 14 farms had houses supplied with running water. Stoves were used for heating the homes in all cases except one, and in this

case fireplaces were used. Radios were found in 35 operator's homes, and 90 homes were screened against flies and other insects.

Table 27.- Farm homes and home conveniences, 110 farms, Appomattox County, 1936

Items	Number having	Percent of all farms
Kind of Dwelling:		
Frame	108	98
Log	2	2
Kind of Lights:		
Kerosene	107	97
Bible	2	2
Electric	1	1
Kind of Heat:		
Stoves	109	99
Fireplaces	1	1
Running Water	14	13
Radio	35	32
Screens	90	82

#### Farm Business Summary

Table 28 gives a summary of the farm business for the year. The individual items shown have already been discussed separately in terms of the total farm. The purpose of this table is to show the complete summary in one table, and to show how the various items are divided between operator, landlord, and cropper. Table 29 gives the same information for the 1935 farm business. Capital investment decreased from 1935 to 1936, as well as total receipts and operating income. The average rate of return on landlord's capital increased from 2.19 to 2.7 percent.



Table 23.- Summary of the farm business on 110 farms in  
Appomattox County, 1936

Average capital	Total		Operator		Landlord		Cropper	
	Average	Per- cent	Average	Per- cent	Average	Per- cent	Average	Per- cent
Real estate	\$5,590	79.7	\$5,033	78.8	\$587	95.6		
Machinery	346	5.0	342	5.4	4	0.7		
Livestock	647	9.2	609	9.5	16	2.7	\$22	55.0
Feed and seed	450	6.1	406	6.3	6	1.0	12	45.0
<b>Total</b>	<b>7,013</b>	<b>100.0</b>	<b>6,396</b>	<b>100.0</b>	<b>583</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>
<b>Receipts: Crops</b>	<b>626.25</b>	<b>64.1</b>	<b>490.80</b>	<b>59.3</b>	<b>25.99</b>	<b>73.2</b>	<b>119.46</b>	<b>89.2</b>
Livestock products	106.14	10.9	101.57	12.5	0.67	1.9	3.90	2.9
Livestock increase	155.49	13.9	128.60	15.3	2.79	7.8	4.10	3.1
Feed & seed increase	-	-	-	-	-	-	-	-
Miscellaneous	108.46	11.1	100.53	12.4	6.07	17.1	6.45	4.8
<b>Total</b>	<b>976.34</b>	<b>100.0</b>	<b>811.50</b>	<b>100.0</b>	<b>35.52</b>	<b>100.0</b>	<b>133.91</b>	<b>100.0</b>
<b>Expenses: Current</b>	<b>722.81</b>	<b>79.5</b>	<b>702.27</b>	<b>79.8</b>	<b>12.31</b>	<b>62.8</b>	<b>12.62</b>	<b>92.7</b>
Livestock decrease	-	-	-	-	-	-	-	-
Feed & seed decrease	88.96	9.3	83.68	9.8	2.31	11.8	0.99	7.3
Real estate decrease	46.99	5.2	42.56	4.8	4.43	22.6	-	-
Machinery decrease	49.98	5.5	49.42	5.6	0.56	2.8	-	-
<b>Total</b>	<b>906.76</b>	<b>100.0</b>	<b>879.95</b>	<b>100.0</b>	<b>19.61</b>	<b>100.0</b>	<b>15.61</b>	<b>100.0</b>
Farm income	67.58		-69.63		15.91		120.30	
Interest	364.95		333.07		29.45		2.43	
Labor income	-297.37		-401.70		-15.34		117.87	
Labor earnings	364.61		155.36		-9.74		219.00	
Return on capital	-413.56		-549.76		15.91		120.30	
% return on capital	-5.9		-8.6		2.7		3.0	

Table 29.- Summary of average farm - Appomattox County - 1935

Average capital	Total		Operator		Landlord		Cropper	
	Average	Per- cent	Average	Per- cent	Average	Per- cent	Average	Per- cent
Real estate	\$6,462	82.5	\$5,677	81.6	\$785	95.6		
Machinery	294	3.7	237	4.1	7	0.9		
Livestock	640	8.2	525	8.4	24	2.9	\$31	59.6
Feed and seed	437	5.6	411	5.9	5	0.6	21	40.4
Total	7,833	100.0	6,960	100.0	821	100.0	52	100.0
<u>Receipts:</u> Crops	639.38	60.4	506.21	56.5	51.10	76.3	103.07	79.2
Livestock products	106.63	10.1	100.25	11.2	0.13	0.3	6.25	4.8
Livestock increase	142.95	13.5	130.62	14.6	2.36	5.8	11.23	8.8
Feed & seed increase	104.15	9.8	96.63	10.8	1.14	2.8	6.88	5.3
Miscellaneous	65.71	6.2	62.14	6.9	6.03	14.8	2.42	1.9
Total	1058.72	100.0	895.85	100.0	40.76	100.0	128.90	100.0
<u>Expenses:</u> Current	682.80	87.0	661.75	87.8	12.39	54.4	15.54	95.0
Livestock decrease	5.20	0.4	5.47	0.5	0.65	2.9	0.50	3.4
Feed & seed decrease	10.54	1.3	8.56	1.1	1.95	8.6	0.52	3.6
Real estate decrease	57.64	7.4	50.62	6.7	7.02	30.8	-	-
Machinery decrease	20.45	2.9	29.68	3.9	0.75	3.3	-	-
Total	734.61	100.0	734.93	100.0	22.76	100.0	14.56	100.0
Farm income	274.11		141.77		18.00		114.34	
Interest	405.36		360.78		41.42		3.16	
Labor income	-151.23		-219.01		-23.42		111.18	
Labor earnings	659.54		437.76		18.50		240.06	
Return on capital	-176.41		-508.75		18.00		114.34	
% return on capital	-2.25		-4.44		2.19		2.2	



## FACTORS AFFECTING INCOME

It has been estimated that 50 percent or more of the factors determining the success of the farm business cannot be controlled by man. For this reason it is very important that the farmers definitely manage those factors which can be controlled. It has been shown in the previous discussion that there was considerable variation in farm returns in the area studied. Some of the factors responsible for the variation, especially weather, can not be controlled, but part of the variation was due to farm organization and management factors. These factors can be studied by statistical analysis and their relation to farm returns shown. The following discussion will deal with the effects of the most important of these factors affecting farm return.

In the analysis of factors, 4 farms are not included because they did not produce tobacco in 1936. It was not practical to compare those farms with tobacco farms, and neither was it practical to try to base any conclusions on them as a separate group. Averages of some of the factors studied were given in some tables as a matter of general information, but they were not included in the discussion of relationship between factors.

### Size of Business

Size of business is an important factor affecting returns in farming as well as in other types of business. Previous studies in the area and throughout the United States have shown that as the size of business increases, returns increase in a favorable year and decrease in an un-

favorable year. There is little chance for either a large loss or a large gain with a small business.

Size of business can be measured in many ways, depending upon the area and type of farming. In a specialized farming area, size might be measured by units of the special product, but in most areas there is too much difference in enterprises for any one enterprise to be used as an adequate measure of size. In areas of this type probably the best measure of size is productive-man-work units. A productive-man-work unit is equivalent to the productive work accomplished by one man in ten hours. By multiplying the acres of crops by the average number of 10-hour days required per acre, and the number of each kind of livestock by the average number of 10-hour days, they require per head, and adding the products, we obtain a measure of size which includes all enterprises in terms of days of productive work.

### Productive-Man-Work Units

The average P.M.W.U. (productive-man-work unit) per farm for the 110 farms was 408; 37 farms had less than 300 work units, averaging 218; 38 farms ranged from 300 to 499, averaging 386; and 31 farms had 500 or more, averaging 679. Four non-tobacco farms averaged 332 P.M.W.U. (table 30). As size of business, measured in terms of P.M.W.U., increased, farm income, labor earnings, returns per worker and percent return to capital increased. The relationship to labor income, as is generally true in an unfavorable year, was inverse. Even though there was an increase in the difference between total receipts and expenses, this increase was not



Table 30.- Relation of productive-man-work units to different measures of returns  
 - 110 farms - Appomattox County - 1936

P.M.W. Units	Number of farms	P.M. W.U.	Average per farm			Labor earn- ings	Returns per worker	Percent returns on capital
			Farm income	Interest on in- vestment	Labor income			
Tobacco farms:								
Less than 300	37	218	\$ 45	\$180	\$ -135	\$ 260	\$ -10	-9.2
300 - 499	38	386	99	361	-262	400	35	-5.5
500 or more	31	679	166	534	-368	599	130	-4.5
Non-tobacco farms	4	232	-801	784	-1585	-1007	-456	-8.0

Table 31.- Relation of productive-man-work units to other measures of size of business. Average for 110 farms, Appomattox County, 1936

P.M.W. Units	Acres of tobacco	Acres of crops	Man equivalent	Animal units except work animals	Real estate investment	Total working capital	Total receipts	Total tobacco receipts
Tobacco farms:								
Less than 500	2.9	22.4	1.5	3.1	\$ 2,819	\$ 657	\$ 434	\$ 218
500 - 499	5.0	59.4	1.9	7.3	5,653	1,306	902	457
500 or more	9.8	92.0	5.2	11.4	8,019	2,218	1,817	932
Non-tobacco farms	-	65.2	2.4	33.0	11,525	3,460	1,065	-



sufficient to pay interest on the increased capital investment of the larger businesses.

Other measures of size of business also increased in relation to P. M. W. U. (table 31). Various other factors increased as P. M. W. U. per farm increased (table 32). Farms with more P. M. W. U. had more efficient use of labor. Work units per man increased from 166 in the lower group to 213 in the higher group. As the size of business increased the value of operator's time increased. Evidently the operators of large businesses realized their time was more valuable than did the operators of small businesses. Value of labor except operator increased with size of business.

As P. M. W. U. per farm increased the number of acres in the farm increased. On farms averaging 213 P. M. W. U. the average size of farms was 121 acres as compared to 308 acres, for farms having 679 P. M. W. U. (table 33). The percent of land not used for crop purpose (other land) decreased as size of farms increased. The larger farms appeared to be making better use of their land than the smaller farms.

#### Acres of Tobacco

Since tobacco was an important crop in the area studied the acres grown per farm should give some indication of size of business, and should affect returns. The average acreage of tobacco for the 106 farms which grew tobacco was 5.7 acres; 32 farms had less than 4 acres, 36 farms had 4 to 6 acres, and 38 farms had 7 or more acres (table 34). There was a consistent relationship between acres of tobacco, farm income,

Table 52.- Relation of P.M.W.U. to various other factors. Average per farm for 110 farms, Appomattox County, 1936

P. M. W. Units	Work units per man	Percent of work units on tobacco	Yield of tobacco (lbs.)	Percent of work units of productive livestock	Crop index	Value of labor except operator	Value of operator's time
<b>Tobacco farms:</b>							
Less than 300	166	44.3	592	24.6	83	122	365
300 - 499	201	42.6	727	23.8	102	329	483
500 or more	212	47.7	764	24.3	110	794	629
<b>Non-tobacco farms</b>	<b>115</b>	<b>-</b>	<b>-</b>	<b>53.7</b>	<b>115</b>	<b>490</b>	<b>392</b>

Table 33.- Relation of P. M. W. U. to distribution of farm acreage, 110 farms, Appomattox County, 1936

P. M. W. Units	Average acres per farm					Total farms	Percent of total farm acres				
	Crop land	Woods	Open pas- ture	Farm- stead	Other land		Crop land	Woods	Open pasture	Farm- stead	Other land
<b>Tobacco farms:</b>											
Less than 300	23.1	53.3	15.9	2.4	20.3	121.0	23.2	44.5	13.2	1.9	17.2
300 - 499	57.7	106.9	40.2	3.1	22.1	230.0	25.1	46.5	17.5	1.3	9.6
500 or more	90.7	145.9	45.0	5.2	21.5	308.3	29.4	47.3	14.6	1.7	7.0
<b>Non-tobacco farms</b>	<b>62.6</b>	<b>243.7</b>	<b>85.0</b>	<b>3.2</b>	<b>12.5</b>	<b>407.0</b>	<b>15.4</b>	<b>59.8</b>	<b>20.9</b>	<b>0.8</b>	<b>3.1</b>



Table 34.- Relation of acres of tobacco to returns and to farm capital - 106 farms - Appomattox County - 1936

Acres of tobacco	Number of farms	Acres of tobacco	Average			Total receipts	Real estate capital	Working capital
			Farm income	Inter-est	Labor income			
Less than 4	32	2.5	\$ 67	\$292	\$-225	\$ 571	\$4,694	\$ 930
4 - 6	36	4.5	71	268	-217	640	4,311	1,807
7 or more	38	9.6	155	454	-299	1,531	6,903	1,612

and total receipts, but no consistent relationship to labor income owing to the effect of real estate capital. The increase in receipts was not great enough to pay the additional interest charges on the larger farms. Farms growing the most tobacco also had some increase in working capital as compared to the other farms.

Farms growing most tobacco also made more tobacco per acre (table 35). The average yield increased from 676 pounds per acre on farms growing less than 4 acres to 748 pounds per acre on farms growing 7 or more acres per farm. Tobacco price remained about the same for all groups. Total acres of crops increased from 38.8 acres to 80.1 acres per farm, and crop index increased from 91 to 106 per farm as acres of tobacco increased from less than 4 to 7 or more per farm. Farms growing more tobacco used labor more efficiently and employed more men. The size of their business was large enough that the labor could be used more efficiently. The number of animal units of productive livestock increased as the acres of tobacco increased. More fertilizer was used per acre by the farmers growing more tobacco, which probably explained their higher yields.

#### Acres of All Crops

Farms having a large total crop acreage also grow more tobacco (table 36). Crop index increased 22 percent as total acres of crops increased from less than 40 to 70 or more acres per farm. Farms growing more crops had more total productive-man-work units and more work units per man. There was a consistent inverse relationship between acres of crops and labor income, but the percent return on capital increased as

Table 35.- Relation of acres of tobacco to various other factors - 106 farms -  
Appomattox County - 1936

Acres of tobacco	Number of farms	Acres of to- bacco	To- bacco yields per acre	Average			Acres of to- bacco per man	P.M. W.U. per man	Men equiv- alent	Value of pur- chased ferti- lizer per acre	Animal units of pro- ductive live- stock
				Aver- age price of to- bacco	Acres of crops	Crop index					
Less than 4	32	2.3	676	12.8¢	38.8	91	0.8	172	1.4	5.19	5.8
4 - 6	36	4.5	685	12.8¢	52.0	95	3.5	200	1.7	5.36	6.8
7 or more	38	9.6	748	12.4¢	80.1	106	3.5	203	2.9	6.05	8.7



Table 36.- Relation of total acres of crops to returns and other factors on 110 farms, Appomattox County, 1936

Acres of crops	Number of farms	Acres of all crops	Acres of tobacco	Crop index	Average		Farm income	Labor income	Percent returns to capital
					P. M. W. U.	per W. U. man			
<b>Tobacco farms:</b>									
Less than 40	38	36.8	3.5	84	239	168	\$ 48	\$ -133	-9.4
40 to 69	35	53.0	6.2	105	425	304	140	-302	-7.1
70 or more	33	99.5	7.9	106	600	212	118	-431	-3.4
<b>Non-tobacco farms</b>	<b>4</b>	<b>65.2</b>	<b>-</b>	<b>115</b>	<b>232.5</b>	<b>115</b>	<b>-201</b>	<b>-1,585</b>	<b>-8.0</b>

acres of crops increased. Farm income was greater on farms growing 70 or more acres of crops than on those with less than 40 acres, but slightly less than on farms growing 40 to 69 acres. One explanation for this was that a larger proportion of the larger acreages of crops was in less intensive and less profitable crops, the most important being hay crops of which only a small percentage was harvested.

### Real Estate Capital

As explained in the first section of this study, weather conditions were such as to make 1936 an unfavorable year for farming in the area studied. During unfavorable years it is expected that large farms, especially when measured in terms of capital investment, will lose more than small farms.

As real estate investment increased, size of business, measured by productive-man-work units, also increased (table 37). The larger farms used labor more efficiently, the work units per man increasing from 175 to 210 between the lower and higher groups. Farms having large real estate investment also had large working capital investment. Crop index increased 33 percent between the lowest and highest groups.

There was a consistent inverse relationship between real estate investment and labor income, from \$-126 on those with less than \$5000 capital to \$-333 on those with \$6000 or more. The farm having the highest real estate investment also had the largest farm income, but there was not a consistent relationship such as would normally be expected.

Average total receipts per \$100 real estate investment decreased 21 percent between the first and second groups, while the average total ex-

Table 37.- Relation of real estate to various factors - 110 farms -  
Appomattox County - 1936

Real estate	Number of farms	Real estate invest- ment	Crop index	F. M. W. U.	Average				Percent returns on capital
					Work units per man	Working capital	Farm income	Labor income	
Tobacco farms:									
Less than \$500	57	2,270	83	267	175	689	\$ 29	\$ -126	-13.1
\$500 - \$5999	54	4,521	95	572	200	1,159	15	-221	-7.6
\$6000 or more	35	9,429	116	607	210	2,323	207	-532	-2.9
Non-tobacco farms	4	11,525	115	282.5	115	3,460	-801	-1,585	-8.0



Table 36.- Relation of real estate investment to receipts and expenses

Real estate investment	Number of farms	Real estate investment	Average		Average per \$100 real estate investment						
			Total receipts	Total expenses	Total receipts	Total expenses	Current expenses	Machinery decrease	Real estate decrease	Feed and seed decrease	Live-stock decrease
Tobacco farms:											
Less than \$500	37	2,270	505	476	\$22.24	\$20.96	\$16.29	\$ .96	\$1.06	\$2.56	\$ .12
\$500 - \$999	34	4,521	796	781	17.61	17.27	12.87	1.02	1.00	1.90	.49
\$6000 or more	35	9,429	1,741	1,474	12.46	15.64	12.72	.64	.74	1.33	.01
Non-tobacco farms	4	11,525	1,065	1,863	9.24	16.17	8.90	.78	.68	5.81	-

penses decreased only 18 percent (table 38). In other words, the farmers in the middle group were unable to cut down expenses in proportion to the decrease in receipts. Machinery decrease, livestock decrease, and real estate decrease were the main items of expense which were out of proportion to receipts. The high livestock expense was largely due to a decrease in value of work stock. More farmers in this group lost horses and mules than in other groups.

#### Animal Units of Productive Livestock

An increase of 53 percent in crop index occurred as animal units of productive livestock increased from less than 4 to 8 or more (table 39). This may be partly due to the fact that more livestock meant more manure to go back on the land. Total productive-man-work units and work units per man increased as the number of livestock increased. By keeping livestock, more work and a better distribution of labor were obtained. There was no consistent relationship between productive livestock and farm income, labor income, or return on capital. However, returns per worker increased as productive livestock was increased.

Table 39.- Relation of animal units of productive livestock to returns and other factors - 110 farms - Appomattox County - 1936

Productive animal units	Number of farms	Productive animal units	Crop index	P.M.W. Units	Average			Returns on worker	Percent return to capital
					Work units per man	Farm income	Labor income		
Tobacco farms:									
Less than 4	33	2.4	79	246	164	\$ -19	\$ -201	\$ -5	\$-11.9
4 - 7	38	5.1	100	401	208	184	-138	77	-3.5
8 or more	38	14.0	112	583	209	180	-393	98	-5.3
Non-tobacco farms	4	33.0	115	282.5	115	-301	-1,583	-456	-8.0



### Rates of Production

Total production on a farm, or in any business, may be increased by increasing the number of units, or the rate of production per unit, or by both methods. Experience and various studies have proven that it is unprofitable to increase the size of business, especially during a poor year, unless rates or economies of production can be increased. If a business is to be profitable it must have good rates of production.

### Tobacco Yield

Tobacco yield was the most important factor affecting returns in 1936. All measures of returns increased as tobacco yields increased (table 40). When tobacco yield increased from less than 500 pounds per acre to 800 or more pounds per acre, farm income increased \$601 per farm, labor income increased \$393 per farm, percent return on capital increased from -12.7 to -1.9, and returns per worker increased \$235.

More manure and fertilizer were used per acre of tobacco on farms having the highest yields, and the price of tobacco per pound was higher (table 41). Size of business, in terms of productive-man-work units and real estate investment, increased as tobacco yield increased. There was very little difference in acres of tobacco per man between the highest and lowest yield groups.

Tobacco yield was so important that the farms could be split into four groups, and there would still be a fairly even distribution of the number of farms (tables 42 and 43). When this division was made there was a wider spread between the average yield of the lowest and highest

Table 40.- Relation of tobacco yield to returns - 106 farms -  
Appomattox County - 1936

Pounds of tobacco per acre	Number of farms	Pounds of to- bacco per acre	Average						
			Farm income	Inter- est	Labor income	Percent returns to capital	Re- turns per worker	To- bacco re- ceipts	Total receipts
Less than 600	33	462	-221	205	\$-487	-12.7	\$ -63	\$295	\$550
600 - 799	36	706	106	298	-192	-6.2	52	445	646
800 or more	37	928	300	472	-92	-1.9	172	771	1370

Table 41.- Relation of tobacco yield to various other factors

Pounds of tobacco per acre	Average										
	Number of farms	Pounds of to- bacco per acre	Acres of to- bacco	Price per pound of to- bacco	Value of pur- chased ferti- lizer per acre of to- bacco	Total acres of gross	Pro- duc- tive man work units	Acres of to- bacco per man	Percent of re- ceipts from to- bacco	Value of real estate	Tons of manure per acre to- bacco
Less than 600	33	462	5.4	11.8¢	4.70	47.5	366	2.8	53.6	4,152	2.1
600 - 799	36	706	5.1	12.4¢	5.56	51.6	366	2.7	52.7	4,600	2.1
800 or more	37	922	6.5	12.9¢	6.32	73.6	501	2.6	49.1	7,165	2.9



Table 42.- Relation of tobacco yield to returns - 106 farms\* -  
Appomattox County - 1936

Pounds of tobacco per acre	Number of farms	Pounds of to- bacco per acre	Average					Returns per worker
			Tobacco receipts	Total receipts	Farm income	Interest	Labor income	
Less than 550	24	414	\$ 253	\$ 497	\$-317	\$252	\$-569	\$ -93
550 - 699	24	611	427	685	-4	291	-295	-15
700 - 849	55	779	515	1,124	217	357	-140	108
850 or more	23	978	866	1,706	465	496	-51	208

\*Four non-tobacco farms omitted.

Table 43.- Relation of tobacco yield to various other factors -  
106 farms\* - Appomattox County - 1936

Pounds of tobacco per acre	Number of farms	Pounds of to- bacco per acre	Acres of to- bacco	Price of to- bacco per pound	Average					
					Value of pur- chased ferti- lizer per acre of to- bacco	Acres of to- bacco per man	Percent of re- ceipts from to- bacco	Tons of manure per acre of tobacco	Value of real estate	Produce- tive man work units
Less than 550	24	414	5.1	\$.130	4.54	2.6	52.0	2.3	3,862	354
550 - 699	24	611	5.7	.122	5.71	3.3	62.3	1.6	4,667	370
700 - 849	35	779	5.0	.133	6.37	2.4	45.9	2.4	5,349	401
850 or more	23	978	7.3	.122	5.22	2.9	50.8	3.3	7,643	532

\* Four non-tobacco farms omitted.

groups, but the same general relationship to returns and other factors, as when the farms were divided into three groups.

### Crop Index

Rates of production, as measured by crop index, had a very important relationship to returns and other factors. When crop index increased from less than 85 to 110 or more farm income increased from \$-224 to \$442 per farm (table 44). Labor income increased from \$-484 to \$-24 per farm. The same relationship held for returns per worker and percent return on capital.

The farms with the highest crop index were larger farms, in terms of acres of total crops and tobacco, and also had the largest average yields of tobacco per acre (table 45). Farms having the largest crop index also had the largest real estate and working capital investments. More productive work was done on farms having a high crop index, although there was not a consistent relationship to work units per man.

### Factors Affecting Tobacco Yield

Since the yield of tobacco per acre had so much effect upon returns it was desirable to study some of the various factors affecting yields.

#### Value of Crop Land per Acre.

Although it may not always be true, it is reasonable to believe that the good cropland will be valued higher than poor cropland, and that the value of cropland per acre should be expected to have some relation-



Table 44.- Relation of crop index to returns - 110 farms -  
Appomattox County - 1936

Crop index	Number of farms	Average					Percent returns to capital
		Crop index	Farm income	Interest	Labor income	Returns per worker	
Tobacco farms:							
Less than 85	35	69	\$-224	\$260	\$-424	\$ -73	-13.2
85 - 109	36	95	82	321	-239	45	- 6.5
110 or more	35	129	442	466	-24	199	-1.1
Non-tobacco farms	4	115	-601	764	-1535	-456	-8.0

Table 45.- Relation of crop index to various other factors - 110 farms -  
Appomattox County - 1936

Crop index	Number of farms	Crop index	Average							
			Total acres crops	Acres to- bacco	Pounds of to- bacco per acre	Price per lb. for tobacco	Work units per man	Total produc- tive-man- work units	Real estate capital	Working capital
Tobacco farms:										
Less than 85	35	69	49.3	3.3	477	\$ .116	183	355	4,043	971
85 - 109	36	95	54.5	4.9	711	.127	206	393	4,607	1,206
110 or more	35	129	70.5	6.8	921	.128	199	466	7,171	1,794
Non-tobacco farms	4	115	65.2	-	-	-	115	232	11,325	3,460

ship to crop yields. The average value of cropland on 56 of the 106 tobacco farms was less than \$21, on 32 farms the average value was \$21 to \$29, and on 38 farms it was \$30 or more per acre (table 46). More acres of total crops and slightly more acres of tobacco were grown on the farms having the more valuable land. Crop index increased from 86 to 107 and tobacco yields from 646 to 763 pounds per acre, between the lowest and highest valued cropland. It appeared that the farmers valued their land in the direction of its variation in productivity, whether to the right degree or not. The fact that the average labor income increased in relation to land value may indicate that the poor land was still over-valued in relation to the good.

#### Fertility Applications.

Table 47 shows the combined effect of the value of purchased fertilizer and the amount of manure used per acre of tobacco. When the amount of manure used was held constant and the value of fertilizer was increased, crop index and tobacco yields increased. Likewise, when the value of purchased fertilizer was held constant and the amount of manure used was increased, crop index and tobacco yield increased. When both manure and purchased fertilizer were increased the increase in yield and in receipts were greater than for either alone. When less than 2 tons of manure and less than \$6 worth of purchased fertilizer were used per acre of tobacco, the average yield was 624 pounds per acre. When more than 2 tons of manure and more than \$6 worth of purchased fertilizer were used, the average yield was 761 pounds per acre. When a small amount of manure and a large amount of fertilizer was used the tobacco yield was 723 pounds per acre. When a small amount of fertilizer and a large amount



Table 46.- Relation of value of cropland to crop acreage  
and yields - 110 farms - Appomattox County - 1936

Value of crop land per acre (dollars)	Number of farms	Value of crop land per acre	Total acres cropped	Average			
				Crop index	Acres of tobacco	Tobacco yield per acre	Labor income
Tobacco farms:							
Less than 21	36	315	54.4	86	5.6	646	\$ -256
21 - 29	32	24	55.0	99	5.7	758	-363
30 or more	39	46	64.2	107	5.7	763	-147
Non-tobacco farms	4	32	65.2	115	-	-	-1,585

Table 47.- Effects of manure and purchased fertilizer on yield and other factors, 106 farms,\* Appomattox County, 1936

Tons of manure and cost of fertilizer per acre of tobacco	Number of farms	Tons of manure per acre of tobacco	Cost of purchased fertilizer per acre	Average		Productive man work units	Total receipts
				Pounds of tobacco per acre	Crop index		
Less than 2 tons:							
Less than \$6	22	0.5	4.05	624	97	375	723
\$6 or more	27	0.4	7.37	728	103	458	1,135
2 tons or more:							
Less than \$6	33	3.5	3.61	734	96	384	991
\$6 or more	24	4.8	7.58	781	103	436	1,130

\* Four non-tobacco farms omitted.

of manure was used, the average yield was 734 pounds per acre. Evidently manure and fertilizer were of about equal importance in their influence on tobacco yield, within the limits between which these factors varied among the farms studied.

### Labor Efficiency

Labor efficiency is a very important farm organization and management factor. For the most efficient use of labor the size of business must be large enough and so arranged as to keep the available supply of labor busy at all times. Probably the best measure of labor efficiency for all farms is work units per man. The average number of work units per man in the area studied was 195.

### Work Units Per Man

The farms making the most efficient use of labor were generally larger businesses than the others (table 4B). The smaller business actually had more men per farm, but did not get as much productive work done per man. Probably the main reason for this was that the farm business was not large enough to keep the available labor force occupied the entire time. The cost of labor per man-work unit on farms with less than 100 work units per man was \$2.52, as compared to \$1.95 per unit on those with 200 or more work units per man.

Crop index increased as work units per man increased, indicating that the man who did more work also did a better job. Apparently there was no relationship between age of operator and work units per man.



Table 48.- Relation of work units per man to returns and other factors -  
110 farms - Appomattox County - 1936

Work units per man	Number of farms	Work units per man	Total productive man work units	Man equivalent	Cost of labor per man work unit	Average					Returns per worker
						Operator's acre	Crop index	Farm income	Inter-est	Labor income	
Tobacco farms:											
Less than 180	30	148	332	2.2	2.52	53	91	\$ -75	\$288	\$ -361	\$ 41
180 - 219	30	199	422	2.1	1.97	53	99	181	555	-174	64
220 or more	30	258	487	1.9	1.95	51	103	208	404	-196	86
Non-tobacco farms	4	115	282.5	2.4	3.12	63	115	-601	764	-1585	-456

There was a consistent increase in farm income and returns per worker, as the number of work units per man increased, but not a consistent increase in labor income, although the group having the smallest number of work units per man also had the lowest labor income. There was not enough difference in the cost of labor per work unit between the last two groups of farms to pay the increased interest charges on the capital of the larger businesses of the last group.

#### Acres of Tobacco Per Man

Since tobacco was the most important enterprise in the area, the number of acres per man should be a good measure of efficiency. As the acres of tobacco per man increased, labor income and returns per worker increased consistently (table 49). There was not a consistent relationship between acres of tobacco per man and tobacco yield. Tobacco yield on farms having less than 2.4 acres per man was 715, on farms having between 2.4 and 3.0 acres per man the tobacco yield dropped to 686 pounds per acre. Yield increased to 757 pounds per acre on farms having more than 3.1 acres of tobacco per man. The increased labor efficiency, as measured by acres of tobacco per man, was not sufficient to offset the low yield in the middle group of farms, and farm income declined, although labor income and returns per worker were both higher than in the group that produced fewer acres of tobacco per man. Yield was more important in 1936 than labor efficiency.

Table 49.- Relation of acres of tobacco tended per man to returns and other factors - 106 farms\* - Appomattox County - 1936

Acres of tobacco per man	Number of farms	Acres of to- bacco per man	Pounds of to- bacco per acre	Price per pound ¢	Average		Farm income	Labor income	Returns per worker
					Percent of work units on to- bacco	Percent of re- ceipts from tobacco			
Less than 2.4	56	1.6	715	12.7	51.7	32.8	\$ 14	\$-354	\$ -13
2.4 - 3.0	37	2.7	686	12.6	48.6	57.4	-17	-313	55
3.1 or more	33	3.9	737	12.4	52.3	59.0	324	-62	169

\* Four non-tobacco farms not included.



### Quality of Product

While it is desirable to produce large yields of tobacco and other products it may not be profitable to increase quantity at the sacrifice of quality. It may be more important that what is produced be of a good quality than to produce larger amounts of poor quality products.

### Tobacco Price

Tobacco price had very little relationship to acres of tobacco, total productive man work units, or work units per man (table 50). As tobacco price increased, the value of purchased fertilizer increased, indicating that the application of fertilizer improved the quality of the tobacco. There was no consistent relationship between tobacco price and tobacco yield. While the yield of tobacco on farms getting 14 cents, or more, per pound for tobacco was higher than either of the other groups and the second group had a lower average yield than the first. This fact explains why the farm income for this second group was also lower than the first, since tobacco yield was the most important factor affecting farm returns in the area in 1936. Farms in the group receiving a high price for tobacco and getting high yields had, by far, the greatest farm income. There was a consistent increase in labor income and returns per worker as the price of tobacco increased.

### Combined Effect of Acres and Price of Tobacco

Farmers who had 5 or more acres of tobacco received 13 cents or more per pound for their tobacco, averaged \$2201 farm income and \$-172 labor income (table 51). There was a consistent increase in farm income and

Table 50.- Relation of tobacco price to returns and other factors - 106 farms\*-  
Appomattox County, 1936

Tobacco price (in cents)	Number of farms	Price per pound for to- bacco cents	Acres of to- bacco	To- bacco yield lbs.	Average						
					Value of pur- chased ferti- lizer per acre	Total pro- duc- tive man work units	Work units per man	Farm income	Inter- est	Labor income	Returns per worker
Less than 11	29	9.2	5.7	700	\$5.17	410	201	\$ 44	\$365	\$-539	\$ 10
11 - 15	38	11.9	5.6	692	5.34	424	195	2	532	-530	41
14 or more	39	15.3	5.7	767	6.05	404	200	237	339	-102	141

\* Four non-tobacco farms not included.

Table 51.- Combined relation of acres of tobacco and tobacco price to returns and other factors - 106 farms\* - Appomattox County, 1936

Acres of tobacco and tobacco price	Number of farms	Acres of tobacco	Price of tobacco per pound	Pounds of tobacco per acre	Average						
					Value of purchased fertilizer per acre of tobacco	Productive man work units	Work units per man	Percent of total receipts from tobacco	Farm income	Labor income	Returns per worker
Less than 5 acres:											
Less than 15¢	33	3.0	\$.110	639	5.03	297	194	30.1	\$ 8	\$-312	\$-76
15¢ or more	23	3.1	.149	735	5.09	261	193	54.4	106	-108	49
5 or more acres:											
Less than 15¢	28	9.0	.105	728	5.61	572	211	56.5	60	-351	92
15¢ or more	22	8.1	.151	754	6.77	543	203	57.5	220	-172	155

\* Four non-tobacco farms omitted.



labor income as the price of tobacco increased. As the acres of tobacco increased, there was an increase in farm income, but a consistent decrease in labor income either with a high or low tobacco price, because of the greater capital investment. The increase in farm income was not sufficient to offset the increased interest charge. On farms having a small tobacco acreage, but getting a high price, the farm income was \$106 and the labor income was \$-108, while on farms having large tobacco acreage, but receiving a low price, the farm income was only \$60 and the labor income \$-351. It was better to have a smaller acreage of good quality tobacco than a large acreage of poor quality tobacco in 1936.

#### Capital Efficiency

On most farms the capital investment is large as compared to farm receipts. If the farmer is to make a large labor income he must use capital efficiently, just as he should use other production factors efficiently.

#### Capital Turnover

Generally the rate of capital turnover on farms is relatively slow as compared to most other businesses. For this reason one of the most common measures of capital efficiency is the number of years required for receipts to equal capital. In the area studied there was a consistent decrease in farm returns as the number of years required for receipts to equal capital increased (table 52). When less than 5.5 years were required for receipts to equal capital farm incomes averaged \$360, and

Table 52.- Relation of years required for receipts to equal capital to returns and other factors, Appomattox County, 1936

Years required for receipts to equal capital	Number of farms	Years required for receipts to equal capital	Receipts per farm	Average Percent of receipts from:			Crop index	Productive man work units	Work units per man
				Live-stock	Miscellaneous	Crops			
Less than 5.5	33	4.4	\$1,538	24.4	9.9	65.7	106	516	207
5.5 - 9.0	38	6.7	936	21.2	10.5	68.3	102	329	193
9.1 or more	35	12.4	574	22.1	14.5	63.4	85	341	192

continued-

Years required for receipts to equal capital	Total capital per farm	Average			Value of operator's time	Return on capital	Percent return on capital
		Farm income	Interest	Labor income			
Less than 5.5	\$6,740	\$ 360	\$554	\$ 6	\$521	\$-161	-2.4
5.5 - 9.0	6,265	105	322	-223	497	-392	-6.2
9.1 or more	7,151	-149	369	-518	437	-526	-8.2

the labor income, \$6. When more than 9 years were required for receipts to equal capital, farm incomes averaged \$-149 and the labor income \$-518 per farm. Not all of the apparent decline in returns was due to capital efficiency, however, since there was a decrease in crop index from 106 to 85 and a decline in work units per man from 207 to 192 between the low and high groups of farms. There was an inter-relationship since crop yield affects receipts and the amount of receipts determined the number of years required for receipts to equal capital. In this instance, the variation in total amount of capital was not sufficient to account for any very large part of the variation in years required for receipts to equal capital.

#### Relation of Capital Turnover to Various Factors With Low or High Crop Index

When crop index was held constant at either a low or high figure there was a consistent decrease in farm income and labor income, as the number of years for receipts to equal capital increased (table 53). When crop index was low, farms having fast capital turnover made \$519 more farm income than those having a slow capital turnover. There was about the same relationship when crop index was high. When crop index was high the percent of returns on capital decreased as rates of capital turnover decreased, but when crop index was low there was practically no change. This was probably due to the large difference in capital investment in the two low crop index groups. There were insufficient records to hold capital constant.



Table 53.- Relation of number of years required for receipts to equal capital, to returns and other factors, when crop index was held constant

	Number of farms	Crop index	Total capital	Man equivalent	Total productive man work units	Average			Percent return on capital
						Total receipts	Farm income	Labor income	
Less than 7.1 years:									
Less than 91	16	77	\$3,546	1.67	366	\$ 714	\$ 53	\$-152	-11.4
91 or more	40	119	7,904	2.44	511	1594	422	-5	-1.5
7.1 years or more:									
Less than 91	30	71	6,013	1.90	572	526	-266	-577	-11.5
91 or more	20	111	7,913	1.81	323	770	45	-364	-5.7

### Combined Effects of Various Factors

After studying the effects of individual factors on returns, it is important to study the combined relationship of some of the more important ones. By considering two or more factors at the same time it is possible to show which has the most influence on returns since more factors are held constant.

#### Tobacco Acreage and Yield

In the area studied it was more important in 1936 to get a good yield of tobacco than to have a large acreage and a poor yield (table 54). Farmers growing less than 5 acres of tobacco yielding 750 or more pounds per acre made farm incomes averaging \$337 as compared to \$-267 for those growing 5 or more acres of tobacco, which averaged less than 750 pounds per acre. Farmers growing a large acreage of low-yielding tobacco actually lost more money than farmers having both a low yield and small acreage. There was a consistent relationship between yield per acre and all measures of return in both low and high acreage groups. Increased size of poor businesses was associated with reduced incomes; many businesses are poor in an unfavorable year.

#### Tobacco Yield and Price

Farmers getting a small tobacco yield and a low price made a farm income of \$-190 and a labor income of \$-425 as compared to a farm income of \$446 and a labor income of \$-17 for those getting a high yield and a high price for tobacco (table 55). Farmers having a high yield but re-

Table 34.- Combined relation of tobacco acreage and yield to returns and various other factors - 106 farms\* - Appomattox County, 1936

Acreage of tobacco and tobacco yield	Number of farms	Acres of to- bacco	Pounds of to- bacco per acre	Crop index	Work units per man	Average		Farm income	Inter- est	Labor income	Returns per worker
						Total produc- tive men	work units				
<b>Less than 5 acres:</b>											
Less than 750#	34	3.0	534	77	171	234	\$ -33	\$213	\$-246	\$ -79	
750# or more	22	3.1	893	114	199	357	174	374	-200	51	
<b>5 acres or more:</b>											
Less than 750#	24	8.5	556	81	209	528	-267	330	-617	-5	
750# or more	26	8.8	902	126	207	589	547	502	45	233	

\* Four non-tobacco farms omitted.



Table 53.- Combined relation of tobacco yield and price to returns -  
106 farms\* - Appomattox County, 1936

Yield of tobacco and tobacco price	Num- ber of farms	Pounds of to- bacco per acre	Price of to- bacco per pound	Total to- bacco re- ceipts	Average			
					Total re- ceipts	Farm income	Labor income	Returns per worker
<b>Less than 750# /acre:</b>								
Less than 13¢	34	822	\$.105	\$289	\$ 539	\$-190	\$-485	\$ -94
13¢ or more	23	581	.144	439	710	-53	-289	-13
<b>750# or more /acre:</b>								
Less than 13¢	27	891	.106	608	1,427	318	-134	114
13¢ or more	22	906	.155	893	1,522	446	-17	195

\* Four non-tobacco farms were omitted.

ceiving a low price made twice as much money as farmers having a low yield but getting a high price for their tobacco. This indicates that it was more important to make a good yield of tobacco in the Wreck Island Creek Watershed during 1936 than to receive a high price for the tobacco. The main reason for this was that yields in general were very low because of the drought and more variation occurred in yields than in price.

**Total Work Units and Crop Index**

Crop index does not affect returns a great deal on a small farm, but does make a great difference on a large farm. On farms having less than 375 productive-man-work units and crop index less than 95 the labor income averaged \$23 as compared to \$77 when the crop index was high (table 56). Farm income increased from \$-337 to \$461 between the low and high crop-index group on farms having more than 375 productive-man-work units. The farms losing the most money were those having large businesses and low crop indexes, the farm incomes averaging \$-337 and the labor incomes \$-751. Farms having a large business and a high crop index made the most money, averaging \$461 in farm income, \$-74 in labor income, and \$190 returns per worker. Crop index had a greater effect on returns than size of business. This was to be expected, since tobacco was the most valuable crop and its yield was more important than its acreage.

Table 56.- Combined relation of total productive-man-work units and crop index to returns and other factors - 106 farms\* - Appomattox County, 1936

Man-work units and crop index	Number of farms	Pro- duc- tive man work units	Crop index	Pounds of to- bacco per acre	Work units per man	Average				
						Acres of crops	Farm income	Interest	Labor income	Returns per worker
Less than 375:										
Less than 95	34	236	74	536	177	31.4	\$ 23	\$177	\$-154	\$ -23
95 or more	13	275	112	641	198	37.1	77	241	-164	11
375 or more:										
Less than 95	21	592	60	559	222	64.0	-327	484	-751	-34
95 or more	33	538	125	695	196	30.6	461	535	-74	190

\* Four non-tobacco farms omitted.



### Total Work Units and Work Units Per Man

To obtain the greatest returns over a period of time requires a moderately large, efficient business. In the area studied, farmers having a large efficient business made farm incomes averaging \$223 and despite the fact that 1936 was a bad year their labor incomes were only slightly lower than those of farmers having a small business and low labor efficiency (table 57). When size of business was held constant, farm income and labor income increased as labor efficiency increased, in both the small and large businesses. When labor efficiency was held constant, farm income increased and labor income decreased, as size of business increased. On small businesses with a high labor efficiency the farm incomes averaged \$167 and the labor incomes \$-48, as compared to farm incomes of \$70 and labor incomes of \$-408 on farms having a large business and low labor efficiency. This indicated that it was better to have a small, efficient business than to have a large inefficient business in a poor year, but best of all, for paying for the use of capital and operator's time, was a large, efficient business.

### Total Work Units, Work Units Per Man, and Crop Index

Farms having a small business, poor labor efficiency, and low crop index averaged \$-17 farm income and \$-181 labor income, while farms having a large business, efficient labor, and a high crop index averaged \$607 farm income and \$60 labor income (table 58).

When total work units and work units per man were held constant and crop index varied, farm income and labor income increased, except in the

Table 57.- Combined relation of total productive-man-work units and work units per man to returns and various other factors - 106 farms\* - Appomattox County, 1936

Total productive-man-work units and work units per man	Number of farms	Pro-ductive man work units	Work units per man	Crop index	Man equiv-alent	Average		Farm income	Inter-est	Labor income	Returns per worker
						Animal units of produc-tive live-stock					
<b>Less than 375 P.M.W.U.:</b>											
Less than 200 /man	30	222	149	83	1.5	3.8	\$ -50	\$166	\$-236	\$ -40	
200 or more	22	286	234	93	1.2	4.2	167	215	-48	40	
<b>375 or more P.M.W.U.:</b>											
Less than 200 /man	24	521	166	110	3.1	10.5	70	478	-408	182	
200 or more	30	611	242	105	2.5	10.1	223	503	-220	108	

\* Four non-tobacco farms omitted.

Table 58.- Combined effect of three factors varying from low to high -  
Appomattox County, 1936

Factors	Average								
	Number of farms	Pro-ductive man work units	Work units per man	Crop index	Man equiv-alent	Farm income	Inter-est	Labor income	Returns per worker
Work units low, work units per man low, crop index low	22	207	151	73	1.4	\$ -17	\$164	\$ -161	\$ -36
Work units low, work units per man low, crop index high	8	261	145	110	1.8	-138	254	-392	-46
Work units low, work units per man high, crop index low	12	288	229	77	1.3	100	202	-102	7
Work units low, work units per man high, crop index high	10	283	240	113	1.2	248	230	19	61
Work units high, work units per man low, crop index low	6	562	159	70	3.5	-742	266	-1088	5
Work units high, work units per man low, crop index high	18	503	169	124	3.0	340	542	-302	133
Work units high, work units per man high, crop index low	15	604	260	84	2.3	-160	480	-640	-59
Work units high, work units per man high, crop index high	15	617	237	126	2.6	607	527	60	260



group of farms low both in total work units and work units per man. Farms having a small business, low labor efficiency, and high crop index are uncommon; only 8 were included in this study. The small number in this class and their extreme abnormality probably accounted for the results obtained. Another situation which is not common is for farms to have a large business, efficient labor and a low crop index. Six of the farms studied fell into this group and their losses were greater than those of any other group.

When size and crop index were held constant and labor efficiency varied there was a consistent increase in returns, in all cases, as labor efficiency increased. When labor efficiency and crop index were held constant and size of business varied, farm income increased when crop index was high and decreased when crop index was low. This indicated that farm size alone had less effect on returns than crop index or labor efficiency. It also indicated that crop index had more effect on returns than labor efficiency since returns varied with crop index, rather than labor efficiency, as size increased. This point was also shown in the double sort on labor efficiency and crop index.

Comparison of Factors Affecting Returns, in 1936 and 1935

Table 58 showed the effects of size of business, labor efficiency, and crop index on returns in 1936. A similar analysis was made for 1935.

**Total Work Units, Work Units Per Man  
and Crop Index for 1935**

When size and labor efficiency were held constant, there was a consistent increase in farm income, and an increase in labor income in all instances but one, as crop index increased (table 59). Of farms having large businesses and inefficient labor, those with a high crop index made a lower labor income than those with a low crop index. Evidently these farms had larger capital investment and the increase in crop yield was not sufficient to offset the additional interest charge, as was indicated by the increased farm income between the two groups. Crop index had less effect on returns in 1935 than in 1936, the main reasons being that there were greater variations in yields in 1936 and the average yields were lower.

When size and crop index were held constant there was an increase in both farm and labor income in all but one instance, as labor efficiency increased. Of farmers with large businesses and low crop index, those using labor inefficiently made larger farm and labor incomes than those using labor efficiently. The small number of farms in the inefficient labor group might have been responsible for the relationship shown, since the average of such a small number of farms may not be representative of the area. Increased labor efficiency had less effect on returns in 1935 than in 1936.

Table 59.- Combined effect of three factors varying from low to high,  
Appomattox County, 1935\*

Factors	Number of farms	Productive man work units	Work units per man	Crop index	Man equiv- alent	Farm income	Interest	Labor income
Work units low, work units per man low, crop index low	38	227	139	76	1.63	\$-32	\$216	\$-248
Work units low, work units per man low, crop index high	20	268	148	108	1.82	251	254	-23
Work units low, work units per man high, crop index low	12	292	237	72	1.23	120	238	-118
Work units low, work units per man high, crop index high	6	255	285	114	1.13	532	390	3
Work units high, work units per man low, crop index low	5	560	168	91	3.34	255	409	-156
Work units high, work units per man low, crop index high	12	536	153	120	3.51	286	656	-370
Work units high, work units per man high, crop index low	17	648	235	81	2.76	189	513	-324
Work units high, work units per man high, crop index high	27	649	245	120	2.65	743	614	129

\* Data calculated from 1935 material.



When labor efficiency and crop index were held constant there was a consistent increase in farm income as size of business increased; however, there was no consistent relationship to labor income. Farmers making the greatest labor incomes were those having large businesses, efficient labor, and high crop index. Farmers with small businesses were better off, in terms of labor income, than farmers with large businesses, unless they had both efficient labor and high crop index. In both 1935 and 1936 the main importance of size was its inter-relationship with labor efficiency and its joint relationship with crop index and labor efficiency to labor income.

In 1935 the main factors affecting returns were crop index, labor efficiency, and size, there not being a great deal of difference in the effects of crop index and labor efficiency on returns. In 1936 the factors ranked in the same order but crop index had by far the greatest effect on returns.

### Comparison of Soil Conservation Service

#### Cooperators and Non-Cooperators

The farms cooperating with the Soil Conservation Service were generally larger farms and had larger businesses than those not cooperating (table 60). Cooperating farms averaged 15.1 acres total crops, .6 acre of tobacco, 3.5 animal units of productive livestock, and 103 total work units per farm more than those not cooperating. Crop index, tobacco yield, and price of tobacco per pound were higher on the cooperating farms.

Table 60.- Comparison of factors on farms cooperating and farms not cooperating with the Soil Conservation Service, 110 farms, Appomattox County, 1936

	Number of farms	Acres of crops	Acres of tobacco	Crop index	Average						
					Pounds of tobacco per acre	Price of tobacco per pound	Animal units of productive live-stock	Productive man work units	Work units per man	Real estate capital	Working capital
Tobacco farms:											
Cooperating	36	68.1	6.2	105	753	\$.128	10.8	481	201	8,214	1,810
Not cooperating	70	53.0	5.4	94	704	.123	5.5	378	196	4,914	1,108
Non-tobacco farms	4	65.2	-	115	-	-	33.0	282	115	11,525	3,460

Table 61.- Comparison of returns on farms cooperating and farms not cooperating with the Soil Conservation Service, 110 farms, Appomattox County, 1936

	Number of farms	Average					Returns per worker	Percent returns to capital
		Total farm receipts	Farm income	Interest	Labor income			
<b>Tobacco farms:</b>								
Cooperating	36	\$1,330	\$ 140	\$419	\$ -279	\$ 86	-5.5	
Not cooperating	70	840	79	312	-233	57	-5.9	
<b>Non-tobacco farms</b>								
(3 cooperating, 1 not)	4	1,065	-801	784	-1585	-456	-6.0	



Total receipts, farm income, labor income, returns per worker, and percent return on capital were all greater for cooperating farms (table 61).

Comparison of Farms Operated by White  
and Colored Operators

White operators had larger businesses, used labor more efficiently, and obtained higher yields than colored operators (table 62). White operators grew 259 pounds more tobacco per acre and received .9 cent more per pound for it than did the colored operators. Colored operators had only about one-half as large capital investment as white operators, and their returns were just about one-half as great. With yields only 70 percent and labor efficiency only 77 percent as high as those of the white operators, it is not surprising that the colored farmers received less for their year's work. The fact that they accomplished about 37 percent more productive work per \$100 of capital investment may indicate that their farms were much less valuable per acre than those of the whites. This would largely account for the difference in income, regardless of color of operator. Furthermore, with size of business averaging 42 percent larger, the white operators averaged only 29 percent higher labor efficiency, which was perhaps partly due to higher crop yields, but may have been an indication that the colored farmers were making as good use as possible of the resources available.

Table 62.- Comparison of factors on farms operated by white and colored operators - 110 farms - Appomattox County, 1936

Color of operator	Number of farms	Crop index	Average								
			Pounds of tobacco per acre	Price per pound for tobacco	Pro-ductive man work units	Work units per man	Real estate capital	Working capital	Farm income	Labor income	Returns per worker
Tobacco farms:											
White	92	102	749	\$.126	430	204	\$ 5,728	\$1,434	\$ 156	\$ -216	\$ 83
Colored	14	71	490	.117	302	158	3,907	766	-276	-467	-41
Non-tobacco farms: (white)	4	115	-	-	282	115	11,525	3,460	-801	-1535	-456

### SUMMARY

The price situation in the area studied was not as favorable as for the state as a whole, but was better than it had been for several years.

Appomattox County is located in south-central Piedmont Virginia. The soils are residual and were formed primarily from acidic rocks. Owing to topography, soil type, and the cropping system followed, soils have been severely eroded.

The exceedingly dry growing season greatly reduced crop yields in 1936.

The average size of farms was 221.8 acres, of which 47.3 percent was in woods, 25.8 percent in crops, and 9.5 percent was idle. Eighty-seven percent of the total acres operated were owned by the operator.

The average farm capital was \$7044, of which 79.2 percent was invested in real estate.

The farms were mainly crop farms, and dark fire-cured tobacco was the main cash crop grown. Tobacco was grown by all but four farms and the average acreage was 5.68 acres per farm growing. Crop sales, 83 percent of which were from tobacco, made up 64 percent of the total receipts of \$976 per farm. The average price of tobacco sold was 12.5 cents per pound.

The average livestock investment was \$647 and the average livestock appreciation was \$274 per farm. Other than work stock, dairy cattle were the most important. The average value of livestock products sold was \$106 per farm.



The average total farm expenses were \$909 per farm. Crop expenses, mainly fertilizer and lime purchased, were the largest items.

The average farm income was \$68 and the average labor income was \$-397.

The most important factors, other than size, affecting returns were: crop index, labor efficiency, and price of tobacco. These same factors affected returns in 1935, but not to exactly the same degree.

All measures of farm returns increased consistently as crop index increased.

All measures of farm returns increased as labor efficiency increased, but to a less degree than with crop index. To obtain efficient use of labor the size of business must be great enough to keep the available labor force busy.

As size of business increased, farm income and labor income increased when the increase in size was accompanied by a high crop index, and decreased when the increase in size was accompanied by a low crop index.

Higher crop yields were secured on the higher valued crop land. Yields also increased as the amounts of fertilizer and manure used were increased.

Soil Conservation Service cooperators had larger businesses, more efficient labor, made higher yields and received greater returns than non-cooperators.

Colored operators had smaller businesses, made smaller yields and received smaller returns than white operators. However, they had less valuable land and limited capital, so they were probably more handicapped than most of the white operators.

To make a complete analysis of factors affecting returns it is necessary to be able to hold several factors constant while studying the effects of other factors. With the limited number of farms included in this study it was impossible to do this except for the more important factors.

While it may be justifiable in good years, it does not seem fair to charge farmers 3 percent interest on real estate and 5 percent on working capital during unfavorable years. The farmers already had the capital and its cost was what they could expect to get for it in the next best alternative use. The rate of interest paid to many farm mortgage companies was less than that charged farmers in calculating labor income.

APPENDIX

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Appomattox County - 1936

Productive-Man-Work Units

Multiply the acres of each crop by the units assigned below:

CROPS

<u>Kind of Crop</u>	<u>Man-Work Units</u>
Tobacco, fire cured	33
Corn: grain	5
silage	4
stover	0
Popcorn	5
Small grain: threshed	2
fed unthreshed	1.5
cut for hay	2
Crops not harvested	0.5
Crops turned under	0.5
Hay: cowpea	2
soybean	2
sudan grass	1.5
Cowpea and sudan grass	
Soybean	2
Perennial grass and legumes, per cutting	1
Not cut	0.5
Lespedeza and clover: seed only	1.5
Hay and seed - seed	0.5
hay	1
Pasture crops	1
Sorghum	15
Truck crops	12
Sweet potatoes	13
Irish potatoes	3
Apples (bearing)	3 (or .1 per tree if acres are not given).
Peaches (bearing)	3 (or .1 per tree if acres are not given).
Other fruit (bearing)	3 (or .1 per tree if acres are not given).
Non-bearing trees	2 (or .05 per tree if acres are not given).

### Livestock

Multiply the number of each kind of livestock by the units assigned below:

<u>Kind of Livestock</u>	<u>Man-Work Units</u>
Dairy cows	13
Dairy heifers	2.5
Dairy calves	2
Dairy bulls	2.5
Beef cows	5
Beef heifers	1
Beef bulls	1
Calves and yearling steers	0.8
2 and 3 year old steers	1
Colts	2
Rams and goats	0.5
Bucks	0.5
Sows	3
Boars	0.5
Hogs raised & fattening hogs	1.5
Hens and mature poultry	0.33
Chicks raised	0.02
Pullets and broilers	0.06
Turkeys, breeding stock	0.33
Turkeys raised	0.04
Bees, per hive	0.5

**Productive Man Work Units on Miscellaneous Receipts**

Use figure already recorded. If no figure is recorded, calculate on basis of quantity or value as indicated in following list.

<u>Item</u>	<u>M. W. U.</u>	<u>Quantity</u>	<u>Value</u>
Man labor	1	1 day	2.50
Man and farm machine	1	1 day	4.00
Man and truck or bus	1	1 day	10.00
Wood: pulp	1	1 cord	-
stove wood, billets	3	1 cord	-
ties, post, poles	1	1 day	5.00
wood on stump	2 for entire transaction		
lumber on stump	3 for entire transaction		
lumber sawed	1	1 day	5.00
Man and team	1	1 day	3.50
Rent of buildings	.5	1 mo.	3.25
Cash rent of land	none		
Stock pastured	1	-	7.00
Team rent	0.1	1 day	3.00



Animal Units - Appomattox County Records - 1956

Multiply average number of each kind of livestock by the value assigned in following list:

<u>Kind of Livestock</u>	<u>Animal Units per head</u>
Cows	1
Heifers	0.5
Bull calves to be raised	0.5
Bulls	1
Beef cattle fattened or wintered	0.5
Yearlings	0.5
Cattle over 2 years old	1
Horses and mules	1
Colts and ponies	0.5
Swes, bucks, goats	0.14
Sheep fattened or wintered	0.05
Kids	0.05
Brood sows and boars	0.2
Hogs raised	0.1
Mature poultry	0.01
Chickens raised	0.005
Mature turkeys	0.02
Turkeys raised	0.006