

A
THESIS

Submitted to the Faculty
of the
Virginia Agricultural and Mechanical College
and
Polytechnic Institute
in
Partial Fulfillment of the Requirements
for the
Degree of Master of Science in Agricultural Economics

by
William Lloyd Gibson, B.S.

June — 1954

Approved by:

H. N. Young
H. N. Young, Head of the Department of Agricultural Economics

H. P. Rein
Dean of Agriculture

AN ECONOMIC STUDY OF AGRICULTURE

ON 174 FARMS HAVING COLORED

OPERATORS IN NANSIMOND

COUNTY, VIRGINIA,

1932

By William M. Gibson, Jr.

LD
5657
V852
1921
6537
C. 2

REPUBLIC OF INDONESIA

DEPARTMENT OF CULTURE AND EDUCATION

MINISTRY OF EDUCATION AND CULTURE

JAKARTA, INDONESIA

1951

ACKNOWLEDGMENTS

The writer wishes to express his appreciation to the colored farmers in Kansaemoni County whose kindly cooperation made this study possible.

The writer further wishes to express his appreciation to Dr. F. L. Underwood for his supervision and helpful suggestions. Dr. H. N. Young also gave helpful suggestions for which the writer is indebted.

Thanks are extended to the members of the clerical staff of the Department of Agricultural Economics for their help in summarizing the records.

Drs. H. N. Young and F. L. Underwood conducted the survey, and L. B. Wilkins, Claude Turner, Henry Davis, R. V. Oliver, C. E. Kline, T. G. Slaughter, A. V. Watts, C. C. Adkins, D. W. Lanford, C. J. Blair, Jr., and J. O. Clay assisted in taking the records.

To Miss Virginia Macey the writer is indebted for typing this thesis, and giving helpful suggestions as to the form used.

CONTENTS

	<u>Page</u>
Purpose and Method of Study	1
Economic Conditions During 1932	2
Location and Description of the Area Studied	4
Location	4
Elevation, Topography, Soil, and Climate	5
Description of the Farms Studied	7
Distribution of Farm Acreage	7
Farm Capital	7
Variation in Farm Capital	9
Livestock	9
Crops	11
Farm Receipts	13
Variation in Farm Receipts	14
Expenses	15
Profits	16
Variation in Labor Income	16
Factors Affecting Labor Income	19
Size of Business	19
Relation of Four Measures of Size of Business to Labor Income	19
Relation of Productive-Man-Work Units to Other Measures of Size	20
Relation of Productive-Man-Work Units to Various Factors	22
Relation of Acres in Crops to Various Factors	24
Rates of Production	25
Relation of Crop Index to Various Factors	25
Relation of Production Index to Various Factors	25
Labor Efficiency	27
Relation of Productive-Man-Work Units Per Man to Various Factors	27

CONTENTS (Continued)

	<u>Page</u>
Relation of Acres of Crops Per Man to Various Factors -----	29
Combined Effect of Size of Business and Other Factors -----	30
Combined Relation of Acres of Crops and Crop Index to Various Factors -----	30
Combined Effect of Hog Animal Units and Pounds of Pork Produced Per Hog Animal Unit on Various Factors -----	33
Combined Relation of Productive-Man-Work Units and Production Index to Various Factors -----	35
Combined Relation of Productive-Man-Work Units and Work Units Per Man to Various Factors -----	37
Combined Effect of Age of Operator and Productive-Man-Work Units on Various Factors -----	38
Combined Relation of Acres and Intensity of Crops Grown to Various Factors -----	40
Combined Effect of Three Factors Above and Below Average -----	42
Other Factors -----	44
Relation of the Value of Cleared Land Per Acre to Various Factors -----	44
Relation of Tenure and Various Factors -----	45
Relation of Education of Operator to Other Factors -----	45
Summary and Conclusions -----	48
Appendix -----	50

PURPOSE AND METHOD OF STUDY

The true economic test of recommended agricultural practices is whether or not farmers generally find them profitable when applied to their businesses. Human nature is prone to attribute apparent success or failure to the wrong cause. Farmers are continually experimenting and gaining experiences in the operation of their businesses. If the practices of a large number of farmers can be enumerated and analyzed statistically, their true relationship to the incomes of farmers can be accurately determined. This will provide farmers and other agricultural workers valuable information.

During the summer of 1933 records of the entire farm business were obtained on 725 farms in Nansemond county, Virginia. These records were obtained by the survey method. ^{1/} Of the 725 records, 262 were obtained on farms having colored operators. This thesis is a report of the results of 174 of the farms operated by colored farmers. The remaining 88 were not included in the analysis for the following reasons: Fifteen farms had less than the equivalent of one man working on the farm for the entire year; 39 had more than 50 per cent of their receipts from some source other than farming; 4 records were inaccurate; 1 record was incomplete; 12 farms were operated by women; 7 were not considered typical of the region; and 10 provided less than 90 total productive-man-work units, that is, less than 90 days of directly productive work for the year.

The data were obtained for the year ending December 31, 1932. Information on the hog enterprise was taken through the disposal of the 1932 hog production. This was considered desirable since some farmers did not

^{1/} A discussion of the accuracy of the survey method is given in "An Economic Study of Agriculture in Northern Livingston County, New York", S. W. Warren, Cornell University Agricultural Experiment Station bulletin 539, 1932.

butcher their hogs until January or February of 1933, because of warm weather in the fall of 1932. Unfavorable prices for peanuts at harvesting caused some farmers to store their peanuts until 1933. When this was done, the actual price which the farmers received was used.

ECONOMIC CONDITIONS DURING 1932

During the period covered by this study the country experienced the most severe depression ever recorded in history. Farmers suffer severely during a depression because of the disparity between the prices which they receive for their products and the prices they pay for commodities which they buy.

The index number of Virginia farm prices for 1932 was 72, and that of wholesale prices of all commodities in the United States was 95, when 1910-14 equals 100. ^{2/} The purchasing power of Virginia farm products was 76 per cent of pre-war. ($72 \div 95 \times 100 = 76$).

The weighted index of six major products from the farms in Nansemond county for the twelve months ending August 31, 1933 was 74 when 1910-14 equals 100. This period was used because so many of the farmers stored their peanuts during the fall of 1932 and sold them in 1933. Also hogs and cotton were sold either in the late fall or early in the following year.

Peanuts, the main cash crop on the majority of the farms, sold for one-third of pre-war prices (Table 1). Sweet potato prices were less than 50 per cent of pre-war. Cotton prices were 52 per cent, corn prices were 68 per cent, and hog prices were 57 per cent of pre-

^{2/} Adapted from Virginia Farm Economics, No. 28, February, 1934, p. 572, by H. N. Young.

Table 1.- Comparison of prices paid Virginia producers for various farm products*

	Prices						Index numbers		Index numbers all Virginia farm products 1910-14 = 100					
	Peanuts per pound	Cotton per pound	Sweet pota- toes per bushel	Irish pota- toes per bushel	Corn per bushel	Hogs per cwt.	(1910-14 = 100)	Corn Hogs						
1932, September	2.0	7.4	40	50	43	4.45	54	51	60	54	79	54	61	75
October	1.6	6.5	25	60	45	4.15	47	35	55	47	31	57	53	73
November	1.6	6.1	25	60	41	3.80	50	35	50	50	32	57	52	74
December	1.0	5.3	35	55	40	3.65	31	45	46	31	74	58	50	74
1933, January	1.1	5.7	45	60	42	3.45	32	53	46	32	76	61	47	75
February	1.1	5.6	49	60	45	3.60	30	57	44	30	74	61	50	70
March	1.1	6.5	55	65	44	3.70	30	62	51	30	78	62	48	68
April	1.1	6.5	60	65	50	3.75	29	62	51	29	78	63	49	68
May	1.6	6.5	65	75	61	3.95	41	64	67	41	81	81	54	66
June	2.0	8.6	65	95	66	4.20	50	69	67	50	104	86	59	91
July	2.5	10.6	75	120	76	4.55	58	84	82	58	144	98	61	121
August	2.5	9.0	110	115	76	4.55	65	71	71	65	124	100	61	98
Weighted yearly average	1.2	6.6	42	106	50	4.13	35	49	52	35	134	68	57	74**
1910-14 Average	3.6	12.6	65	79	74	7.50	100	100	100	100	100	100	100	100

* Adapted from Virginia Farm Economics, by H. H. Young.

** Yearly weighted average for the six products shown in the table for the crop year ending August 31, 1933.

war (1910-14 = 100). Irish potatoes were the only crop which sold at a price averaging above pre-war. However, Irish potatoes are not correctly shown by the crop year chosen, since the 1932 white potato crop was practically all sold by the end of 1932. Irish potatoes were not a very important crop on the farms studied, since 30 per cent of the total production was consumed in the home and saved for seed.

With prices so low it takes more pounds of peanuts, and more pounds of cotton to pay for a day's labor or to pay the taxes and interest on mortgages on farms.

LOCATION AND DESCRIPTION OF THE AREA STUDIED

Location

Nansemond County lies in the southeastern part of the coastal plain of Virginia. It is bounded on the north by Isle of Wight County and Hampton Roads; on the east by Norfolk County; on the south by Gates County, North Carolina; and on the west by Southampton and Isle of Wight counties. Only Princess Anne and Norfolk Counties lie between Nansemond County and the Atlantic Ocean.

The study covered the territory west of the dismal swamp; south of the Norfolk and Danville branch of the Southern Railroad; and east of longitude 76 degrees 50 minutes.

Elevation, Topography, Soil, and Climate

The median elevation for the farms studied was 60 feet above sea level; the lowest was 10 feet; and the highest 80 feet (Table 2). In no instance was the elevation of the farmstead as great as 100 feet above sea level. The land is nearly flat and ditches are depended upon to carry off the surface water. Many swamps are located in the region, some covering large areas.

Table 2.- Elevation in feet above sea level for the farms studied, by magisterial districts

Magisterial district	High	Low	Median
Cypress -----	70	30	50
Whaleyville -----	75	10	60
Holy Neck -----	80	30	60
All farms -----	80	10	60

The only barriers to good field layout are drainage ditches, roads, and swamps.

Maps of the soil survey in Nansemond county were not available at the time of this analysis. The majority of the soils appear to be of a sandy loam type. It is likely that most of the soils are deficient in lime, since nearly every farmer applied land plaster to his peanut crop to cause hardening of the shells.

The climatological station located in Nansemond county has not been operating long enough to give a typical average rainfall and temperature.

The average annual rainfall at Norfolk for 62 years is 44.62 inches. The average rainfall in the crop growing season (March to September) is 29.43 inches (Table 3).

Table 3.- Average precipitation in inches and temperature in degrees at Norfolk for 1932*

	Normal		1932		1932 in per- cent of normal	
	Rain- fall	Temper- ature	Rain- fall	Temper- ature	Rain- fall	Temper- ature
January -----	3.11	40.6	4.53	52.8	145	130
February -----	3.55	42.7	2.15	49.4	64	116
March -----	3.84	48.2	3.13	46.4	82	96
April -----	3.30	56.8	1.63	56.3	49	99
May -----	3.84	66.2	2.48	65.2	65	98
June -----	4.29	74.4	3.26	75.4	76	101
July -----	5.60	78.7	3.21	79.2	57	101
August -----	5.07	77.4	1.60	78.8	32	102
September -----	3.54	71.6	1.31	72.8	43	102
October -----	3.16	62.5	3.96	63.4	125	101
November -----	2.36	51.4	2.34	51.6	99	100
December -----	3.55	45.1	3.70	47.4	110	110
Annual -----	44.82	59.5	53.50	61.6	75	104

* Data were taken at the Norfolk climatological station about 20 miles outside the area studied.

The rainfall during the growing season in 1932 was 68 per cent of normal. The rainfall was below normal in all seven months, while April, August, and September were far from normal. During the harvesting season for peanuts the rainfall for 1932 was 114 per cent of normal.

The average monthly temperature at Norfolk is 59.5 degrees F. (Table 3). The average monthly temperature for 1932 did not vary greatly from the normal, except in January and February, which were unusually warm.

The average length of the growing season is 227 days. For 1932 the last killing frost in the spring occurred March 14 and the first killing frost in the fall occurred November 27, making a growing season 51 days longer than usual.

DESCRIPTION OF THE FARMS STUDIED

Distribution of Farm Acreage

The average size of the farms studied was 79.8 acres per farm (Table 4).

Table 4.- Average size of 174 farms having colored operators in Hansemond County, Virginia, 1932

	Number of farms having	Average acres per farm	Per cent of total acres
Crop land	174	25.1	51
Woods not pastured	155	47.3	59
Woods pastured	127	3.7	5
Other permanent pasture	32	0.4	1
Farmstead, roads, fence rows, etc.-	174	1.7	2
Other land	40	1.6	2
Total	174	79.8	100

The acreage of crop land amounted to less than one-third of the total acres in the farms. Nearly three-fifths of the farm acreage was in woods not pastured. Very little permanent pasture was found on these farms. The farmstead yards, garden, etc., occupied 1.7 acres per farm.

Farm Capital

The total average capital per farm for the 174 farms studied in 1932 was \$2,536 (Table 5). Of the total farm capital 88.2 per cent consisted of real estate, and 11.8 per cent was in working capital.

Table 5.- Distribution of capital on 174 farms having colored operators in Hennessy County, Virginia, 1932

	Average investment	Per cent of total investment
Dwellings	\$ 599	23.6
Other buildings	155	6.1
Crop land	947	37.4
Other land*	536	21.1
Total real estate	\$2,237	88.2
Machinery and equipment	\$ 75	3.0
Livestock	148	5.8
Feed and supplies	76	3.0
Total working capital	\$ 299	11.8
Total capital	\$2,536	100.0

* Swamp land and woods.

It is very important in operating a farm business to have the majority of the capital invested in productive crop land and livestock, from which a return can be expected. Crop land constituted 37.4 per cent of the total investment on the farms studied. Swamp land and woods constituted 21.1 per cent of the total investment. This swamp land and woods often furnishes a salable product of pine and cypress logs for lumber.

Of the total farm capital 29.7 per cent was in buildings, of which about four-fifths was in dwellings. The average value of farm operators' dwellings was \$599.

Livestock constituted 6 per cent of the total farm investment, or about one-half of the working capital.

Variation in Farm Capital

Less than \$1000 invested in total farm capital was found on 6.9 per cent of the farms (Table 6). This includes both tenants' and landlords' capital on rented farms. Only 5.2 per cent of the farms had \$5000 or more invested in the farm business. About two-thirds had between \$1000 and \$5000 invested in the farm business. Apparently some of the farms have too small an investment in land, buildings, livestock, and machinery to afford efficiency in farm operation.

Table 6.- Variation in total farm capital on 174 farms
having colored operators in Nansemond County,
Virginia, 1952

Capital	Number of farms	Per cent of farms
Less than \$1000	12	6.9
\$1000 - \$1,999	56	32.2
\$2000 - \$2,999	55	31.6
\$3000 - \$3,999	28	16.1
\$4000 - \$4,999	14	8.0
\$5000 or more	9	5.2
	174	100.0

Livestock

Hogs were the most important class of livestock on these farms. For the year ending December 31, 1952 the average number of sows per farm was 1.76, and the average number of boars per farm was 0.55 (Table 7). Of the farms studied 83.5 per cent had at least one sow, while 55 per cent had two or more. Pigs weaned averaged 13.6 per farm.

Table 7.- Average numbers of livestock per farm on 174 farms having colored operators in Hansemond County, Virginia, 1932

	January 1, 1932	December 31, 1932
Cows	0.51	0.52
Heifers, 1 year or over	0.05	0.06
Heifers, under one year	0.05	0.06
Veal calves	-	0.05
Bull calves to be raised	0.01	0.02
Bulls	0.01	0.01
Horses	0.57	0.55
Mules	1.21	1.17
Hogs	0.55	0.54
Sows	1.74	1.79
Other hogs	1.50	2.45
Pigs	1.15	1.62
Chickens	22.45	25.12
Other poultry	0.03	0.04

Dairy cattle were of little importance. There was an average per farm of only 0.52 cow which was producing milk. Of the 174 farms studied 45.6 per cent had milk cows. Eleven farms had two or more cows. One farm had five cows. Ninety-two farms had no cattle of any kind.

Poultry was kept by 95.4 per cent of the colored farmers. The average flock consisted of about 25 mature birds per farm. No farm received large enough receipts from poultry to be classified as a commercial poultry farm. Practically no poultry except chickens was kept.

Mules were more prevalent on the farms than were work horses. The average number of work animals kept was 0.55 horse and 1.19 mules per farm.

Crops

All except one of the farms studied produced peanuts. The average acreage per farm was 10.7 and the average yield per acre 1,195 pounds unshelled (Table 8).

Cotton, another important cash crop grown on the farms studied, averaged 3.8 acres per farm for cotton sold in the seed and 0.2 acre per farm for cotton ginned. Cotton sold in the seed was grown on 91.4 per cent of all farms and yielded 634 pounds per acre. Cotton which was ginned was grown on 1.7 per cent of the farms and yielded 471 pounds of lint cotton and 517 pounds of cotton seed per acre.

Corn alone for grain was grown on 71.5 per cent of the farms and averaged 4.8 acres per farm. Corn grown with soybeans or cowpeas was grown on 47.1 per cent of the farms and averaged 3.5 acres per farm. Corn grown with soybeans or cowpeas yielded 0.4 bushel more corn per acre than corn grown alone.

Truck crops were of little importance, averaging only 0.8 acre per farm. Sweet potatoes represented the most important truck crop, averaging 0.4 acre per farm, or about one-half of all the acres used for truck crops.

Hay crops averaged 0.8 acre per farm. This does not include the peanut vines which were saved for hay. These vines were saved by 83.3 per cent of the farmers, and averaged 6.6 acres per farm. The average yield was 502 pounds per acre. Oat hay was raised on 55.2 per cent of the farms and yielded 1,858 pounds per acre. Twenty-one farms cut soybeans and cowpeas for hay.

Table 8.- Crops grown on 174 farms having colored operators
in Nansemond County, Virginia, 1932

Crops	Per cent farms growing	Acres per farm (all farms)	Average yields per acre or per tree
Peanuts	89.4	10.7	1,195 lbs.
Cotton (sold in seed)	91.4	5.8	654 lbs.
Cotton (ginned) lint	1.7	0.2	471 lbs.
seed	-	-	517 lbs.
Corn for grain	71.5	4.8	21.9 bu.
Corn fodder*	86.8	5.6	272 lbs.
Corn tops*	5.7	0.5	486 lbs.
Corn and soybeans or cowpeas grown together	47.1	3.5	22.5 bu. $\frac{1}{2}$
Tobacco	1.7	0.1	1,155 lbs.
Sorghum	15.5	0.1	66 gals.
Soybeans or cowpeas alone for grain	10.5	0.1	11 bu.
Total main crops		25.1	
Irish potatoes	27.6	0.2	97 bu.
Sweet potatoes	59.8	0.4	89 bu.
Other truck crops	16.7	0.2	-
Total truck crops		0.6	
Small grains for hay	55.2	0.6	1,856 lbs.
Peanut hay*	85.3	6.6	502 lbs.
Soybeans and cowpea hay	12.1	0.2	2,007 lbs.
Total hay crops		0.8	
Soybeans or cowpeas pastured	55.9	0.6	-
Small grains pastured	12.6	0.3	-
Total pasture crops		0.9	
Miscellaneous crops		0.2	
Apples, bearing (5.1 trees)	70.7	-	0.8 bu.
Peaches, bearing (2.8 trees)	52.2	-	0.5 bu.
Grapes (0.8 vines)	48.9	-	2.6 bu.
Other bearing fruit trees (0.7 trees)	-	-	-
Non-bearing fruit trees (1.4 trees)	-	-	-
Total all crops		25.8	
Acres double-cropped	50.5	0.7	-
Acres used for crops		25.1	

* Acreage of crop residues not included in total acres.

$\frac{1}{2}$ Average yield of corn saved for grain. The average yield of soybeans or cowpeas hogged from fields planted to corn and soybeans or cowpeas was 14.9 animal unit days of full forage per acre.

Soybeans or cowpeas for pasture were grown on 33.9 per cent of the farms, and small grains for pasture were grown on 12.6 per cent of the farms.

Only a few fruit trees for home use were found on these farms. Apples averaged 5.1 trees and peaches averaged 2.6 trees per farm. Owing to frosts fruit yields in 1932 were very low. Scuppernong grapes were grown on 46.9 per cent of the farms. The yields of these grapes averaged 2.6 bushels per vine in 1932.

The total acres of crops averaged 25.6 per farm. Double-cropping averaged 0.7 acre per farm. Crop land averaged 25.1 acres per farm.

Farm Receipts

The sale of crops constituted 85.8 per cent of the total receipts per farm for the farms studied (Table 9). Of the total receipts 52.2 per cent were from the sale of peanuts, the most important cash crop grown in the area studied.

Table 9.- Distribution of receipts on 174 farms having colored operators in Hennemond County, Virginia, 1932

Source	Average receipts per farm	Per cent of total receipts
Peanuts sold -----	\$ 167	52.2
Cotton sold -----	56	17.5
Other crops sold -----	45	14.1
All crops -----	\$ 268	83.8
Fork sold -----	9	2.8
Other livestock products sold -----	9	2.8
Livestock increase -----	18	5.6
All livestock -----	\$ 36	11.2
Other receipts -----	\$ 16	5.0
Total -----	\$ 320	100.0

Receipts from livestock were of little importance among colored farmers. Only 11.2 per cent of the total farm receipts came from livestock. The sale of livestock products constituted 6 per cent of the total receipts.

The average receipts per farm were \$320.

Variation in Farm Receipts

Total farm receipts amounted to less than \$150 per farm on 23.6 per cent of the farms studied. Less than \$550 total receipts per farm were obtained on about 70 per cent of the farms. On many farms the receipts were too low to afford a comfortable living to the operator and his family, even if he had no farm expenses (Table 10).

Table 10.- Variation in farm receipts on 174 farms having colored operators in Nansemond County, Virginia, 1932

Receipts	Number of farms	Per cent of farms
Less than \$150	41	23.6
\$150 - \$249	59	22.4
\$250 - \$349	41	23.6
\$350 - \$449	15	8.6
\$450 - \$549	17	9.8
\$550 - \$649	8	4.6
\$650 or more	18	7.4
	174	100.0

Expenses

Labor was the most important item of expense on the farms studied. For the year ending December 31, 1932 labor expense, exclusive of the value of the operator's time, amounted to \$204 per farm (Table 11). This was 47.8 per cent of all the farm

Table 11.- Distribution of farm expenses on 174 farms having colored operators in Nansemond County, Virginia, 1932

Item	Average expenses per farm	Per cent of total expenses
Hired labor and board -----	\$ 26	6.1
Unpaid labor and board (except operator) -----	178	41.7
Total labor (except operator) -----	\$ 204	47.8
Purchased feed -----	7	1.6
Miscellaneous livestock expenses* -----	4	0.9
Total livestock expenses -----	\$ 11	2.5
Fertilizer and lime -----	58	13.6
Seeds and plants -----	10	2.4
Peanut picking and hauling -----	29	6.8
Miscellaneous crop expenses** -----	21	4.9
Total crop expenses -----	\$ 116	27.7
Machinery expenses*** -----	12	2.8
Hired machinery and machinery use -----	15	3.5
Total machinery expenses -----	\$ 27	6.3
Building expenses and decrease in value of wood land*** -----	38	8.9
Taxes -----	25	5.8
Fences and drains -----	2	0.5
Total real estate expenses -----	\$ 65	15.2
Other expenses -----	2	0.5
Total expenses -----	\$ 427	100.0

* Includes breeding fees, medicines and tonics, veterinary, disinfectants, whitewash, salt, feed grinding, pepper and borax, horseshoeing, and stock pasturage.

** Includes twine, trees, spray materials, barrels, baskets, peanut bags, etc.

*** Net decrease in inventories plus repairs, supplies, and insurance.

expenses. Labor expense includes the cost of unpaid family labor exclusive of the value of the operator's time, hired month and day help, and the value of board furnished to paid and unpaid labor. For the farms studied 87.3 per cent of the total labor expense was for unpaid family labor.

Crop expenses were second in importance. These expenses amounted to 27.7 per cent of all the farm expenses. Fertilizer and lime were the most important crop expense, averaging \$58 per farm, or 49.2 per cent of the total crop expenses.

Building expenses averaged \$65 per farm, or 15.2 per cent of the total farm expenses. Taxes made up 5.6 per cent of all the farm expenses, and averaged \$25 per farm, or about 1 per cent of the total capital investment.

Average total expenses amounted to \$427 per farm, or about 53 per cent greater than average total receipts.

Profits

The difference between the total receipts and the total expenses, or the amount which the farmers had left to pay them for their labor and the use of all capital invested in the business, averaged \$-107 per farm (Table 12).

Inasmuch as some of the farms were mortgaged, and others were not, interest on the total investment at a uniform rate was subtracted from the farm income to obtain a comparable measure of financial success. The result is called labor income. When interest

on average value of real estate was charged at five per cent and on working capital at six per cent the average labor income was \$-257.

Table 12.- Various measures of profits on 174 farms having colored operators in Nansemond County, Virginia, 1952

	Average per farm
Average capital _____	\$ 2,536
Total receipts _____	\$ 320
Total expenses _____	427
Returns to capital and operator's labor _____	\$ -107
Interest on average capital _____	\$ 150
Labor income [*] _____	-257
Value of farm privileges _____	221
Labor earnings _____	- 16
Value of operator's time _____	239
Return on capital ^{**} _____	-346
Per cent return on capital _____	- 13.6

* Labor income is what the farmer receives for his labor and management after deducting all business expenses, and interest on average capital, in addition to having a house to live in and products furnished by the farm.

** Return on capital is what is left to pay for the use of capital invested, after paying all business expenses and deducting the estimated value of the operator's time.

The farm business usually furnishes the farmer a part of his living expenses, such as food, fuel, and a dwelling in which to live. This amount depends to a great extent upon the number of persons in the family. The average farm products furnished to the operator on the 174 farms during 1952 was \$221. When the value of the farm products furnished is added to labor income the result is called labor earnings. The average labor earnings for these farms during 1952 amounted to \$-16 per farm.

Another measure of farm financial success is the return on capital. This averaged \$-546 per farm for the farms studied. The total capital on these farms averaged only \$2,556 per farm. When there is such a small investment as this, return on capital has little significance. If the farmers had made a 10 per cent return on capital it would have amounted to only a little more than \$250.

Variation in Labor Income

The highest labor income made by any colored farmer included in the study was \$1,051, and the lowest \$-1,013. The range was \$2,064. The average labor income was \$-257.

Labor income on 40 per cent of the farms fell in a range of \$-195 to \$-394 (Table 13). On 5 per cent of the farms the labor income was less than \$-594.

Table 13.- Variation in labor income on 174 farms having colored operators in Nansemond County, Virginia, 1952

Labor income	Number of farms	Per cent of farms
Less than \$-795	5	2
\$-794 - \$-595	6	3
\$-594 - \$-395	21	12
\$-394 - \$-195	69	40
\$-194 - \$5	55	32
\$6 - \$205	18	10
\$206 or more	2	1
	174	100

After paying all expenses and interest on capital only 11 per cent of the farms had any income left to pay the operator for his time. Only two farms had a labor income of \$206 or more.

FACTORS AFFECTING LABOR INCOME

By survey methods, when capital, receipts, and expenses on each farm in a region are recorded the successful farms in the region may be found. Statistical analysis will determine why these farms were successful and why the other farms were unsuccessful.

Size of BusinessRelation of Four Measures of Size of Business to
Labor Income

Owing to poor weather conditions and low prices received for farm products, 1932 was a poor year for farmers in Nansemond County, Virginia. Size of business, as measured by productive-man-work units, man equivalent, real-estate capital, and acres in crops was inversely related to labor income in 1932 (Table 14).

Table 14.- Relation of four measures of size of business to labor income on 175 farms having colored operators in Nansemond County, Virginia, 1932

Groups	Various measures of size			
	Productive man-work units	Man equiv- alent	Real- estate capital	Acres in crops
	Labor income	Labor income	Labor income	Labor income
Smallest 20 per cent of farms according to each measure of size -----	\$ -177	\$ - 80	\$ -145	\$ -202
Next 30 per cent -----	-246	-184	-216	-239
Next 30 per cent -----	-267	-286	-253	-259
Largest 20 per cent of farms according to each measure of size -----	-273	-438	-373	-271

Size of business is directly related to labor income during favorable farming years, and inversely related to labor income in poor years. In all similar farm management studies this has been strikingly shown. It is not possible to make a very large loss or a very large profit with a small business.

There was a larger range between the relation of size of business to labor income when size was measured by man equivalent and real-estate capital than when size was measured by productive-man-work units or acres in crops. The relationship between size of business and labor income when size is measured by man equivalent depends upon the amount of productive labor each man accomplishes during the year. The relationship when size of business is measured by real-estate capital depends upon the per cent of the total investment the farmer has in necessary buildings and productive land.

Relation of Productive-Man-Work Units to Other Measures of Size

A productive-man-work unit is the average amount of directly productive work accomplished by one man in ten hours. It is roughly equivalent to the amount of man labor required to grow and harvest one acre of timothy hay. It may be used as a unit for measuring the size of a farm business so that the different farm enterprises are comparable and may be combined.

As the size of business increased when measured by total productive-man-work units, the size of business measured by six other size factors also increased (Table 15). Man equivalent did not increase as fast as productive-man-work units, indicating that more productive work per man was done on the large businesses. The total

Table 15.- Relation of productive-man-work units to other measures of size of business on 173 farms having colored operators, Hansemond County, Virginia, 1932

Productive-man-work units	Size of business in per cent of average as measured by-									
	Number of farms	Average man work units per farm	Man work units	Acres of crops	Hog animal units	Total animal units	Man work units	equiv. livestock	Working estate capital	Real-estate capital
Less than 146	34	120	51	51	36	44	78	49	66	66
146 - 194	32	166	71	70	69	76	89	71	96	96
195 - 245	43	231	94	97	94	96	94	96	92	92
246 - 294	20	269	115	118	125	124	117	115	105	105
295 or more	36	392	166	157	162	156	153	167	140	140

number of animal units represented by hogs increased faster than did productive-man-work units, indicating that the larger Businesses had more hogs than the smaller ones. Total animal units of productive livestock, since this factor was mostly dependent on the number of hogs on these farms, agreed very closely with total hog animal units.

Acres of crops and total amount of working capital were closely associated with total productive-man-work units, since crops provided a major part of the productive work on these farms, and the amount of working capital was largely dependent on the acreage of crops produced.

Whether real-estate capital varies consistently with the total amount of productive work on the farm depends upon the relative amounts of productive and unproductive capital added in increasing the size of business.

Productive-man-work units is considered the best measure of size, since it combines all enterprises on the basis of the amount of directly productive work represented by each.

Relation of Productive-Man-Work Units to Various Factors

As the productive-man-work units per farm increased there was a very consistent decrease in the labor income (Table 16). This is usually the case in a bad year.

Table 15.- Relation between productive-man-work units and various other factors on 175 farms having colored operators in Nansmond County, Virginia, 1932

Productive-man-work units	Number of farms	Average productive-man work units	Productive-man-work units per man	Production index*	Hog animal units	Acres of crops	Labor income
Less than 155	42	185	88	85	0.8	14	\$-197
155 - 225	55	194	117	98	1.1	22	-242
226 - 294	42	259	150	101	2.0	29	-270
295 or more	56	332	165	109	2.6	41	-272

* Production index is the production per hog animal unit and per acre in per cent of the regional average, weighted by productive-man-work units. The regional averages from which production index was worked were calculated for both the farms having colored and those having white operators. The average production index for the farms having colored operators was 85. This was converted to 100 by multiplying by 1.17647.

A consistent increase was found in production index and in work units per man, as the productive-man-work units per farm increased. Had the large farms obtained the same labor efficiency and the same rates of production as the small farms there would have been much greater losses on the larger farms. One big advantage of a large business is that it can provide the farm labor force with productive labor throughout the year.

The consistent increase in the production index as productive-man-work units per farm increased indicates that the large amount of work and the large amount of work per man do not necessarily lower the quality of the work done.

Relation of Acres in Crops to Various Factors

On farms which receive a large percentage of receipts from the sale of crops of the same relative degree of intensity, acres of crops per farm is a good measure of size of business.

On the farms studied there was a consistent decrease in labor income as the acres of crops per farm increased (Table 17). Productive-man-work units per man and crop index had an unbroken upward trend as the acres of crops increased. Again we find that an increase in the size of business gave better labor efficiency, without sacrificing the thoroughness of the work done. This single fact helps to explain why, in a good year, the large farm businesses make more money than the smaller ones.

Table 17.- Relation between acres of crops and various factors on 175 farms having colored operators in Nansemond County, Virginia, 1932

Acres of crops	Number of farms	Acres in crops	Average productive-man-work units per farm	Productive-man-work units per man	Crop index*	Acres in peanuts	Labor income
Less than 16.6	54	12.4	124	85	98	5	\$ -202
16.6 - 25.4	50	19.6	188	110	99	8	-230
25.5 - 30.5	42	26.7	246	142	100	11	-260
30.6 or more	47	40.8	553	150	104	17	-276

* Crop index is the yield of all crops in per cent of the regional average weighted by productive-man-work units. The regional averages from which crop index was worked were calculated for both the farms having colored and those having white operators. The average crop index for the farms having colored operators was 85. This was converted to 100 by multiplying by 1.17647.

Rates of Production

Relation of Crop Index to Various Factors

As the crop index increased on these farms there was a distinct, positive relationship to labor income (Table 18). Farms with a crop index of 12 per cent better than the average lost less than one-half as much as the farms with a crop index as low as 12 per cent below the average.

The kind and condition of the soil is a major factor in obtaining good crop yields, and higher productivity should normally be reflected in higher land values. That farmers realize this is shown by the values they estimated they would be willing to pay for the different types of land to be used for agricultural purposes. As the crop index increased there was also an increased value of the cleared land per acre on the farms studied. One farmer stated the situation very clearly, when he said that he would rather own a good farm with a mortgage against it or rent a good farm, than own a poor farm free of debt.

Total productive-man-work units and work units per man also increased as the crop index increased. Not all of the change in labor income can be attributed to the increase in the crop index, because the increase in the size of business and the increase in the labor efficiency undoubtedly had some influence.

Relation of Production Index to Various Factors

Production index is a measure of the combined rates of production of all the farm enterprises. On the farms studied it included the crops and hog enterprises.

Table 18.-- Relation between crop index and various factors on 173 farms having colored operators in Henrsemont County, Virginia, 1932

Crop index	Number of farms		Average Acres in crops		Value of cleared land per acre		Average productive-man-work units		Productive-man-work units per man		Labor Income	
Less than 88	60	73	25	\$ 55	201	110	\$ -291					
88 - 111	63	99	27	34	245	132	-285					
112 or more	50	134	27	39	261	146	-136					

Table 19.-- Relation between production index and various factors on 173 farms having colored operators in Henrsemont County, Virginia, 1932

Production index	Number of farms		Crop index		Pounds pork produced per hog animal unit		Average productive-man-work units		Productive-man-work units per man		Labor Income	
Less than 88	56	74	73	368	200	108	\$ -299					
88 - 111	65	98	90	958	240	132	-284					
112 or more	52	132	133	1,231	264	146	-135					

As the production index increased there was a consistent increase in labor income (Table 19). The range in labor income between the farms having the lowest production index and those having the highest was \$164. Of the farms which had a production index of 112 or more 29 per cent had a plus labor income as compared to only 4 per cent for farms with a production index less than 85.

Size of business and labor efficiency also increased as the production index increased. Some of the increase in labor income associated with the increase in production index was probably a result of the increase in these two factors.

Labor Efficiency

Labor expense on the farms studied was 47.3 per cent of the total farm expenses. With such a high per cent of expenses represented by labor cost it is very necessary for the farmers to use labor efficiently. The best way to obtain high labor efficiency is to have a large enough business to keep the available labor supply busy throughout the year at productive work.

Relation of Productive-Man-Work Units Per Man to Various Factors

The average labor income increased consistently as the work units per man increased (Table 20). There was a difference of \$256 between the farms having less than 100 work units per man and those having 160 or more per man.

Table 20.-- Relation between productive-man-work units per man and various factors on 173 farms having colored operators in Hennessy County, Virginia, 1932

Work units per man	Number of farms	Average work units per man	Average work units per farm	Acres in crops	Production index	Operator's age	Labor income
Less than 100	58	74	169	19	92	53	\$ -381
100 - 119	57	110	193	21	96	50	-294
120 - 139	51	129	227	25	102	45	-216
140 - 159	25	148	272	50	104	47	-196
160 or more	42	199	314	54	103	44	-125

The farms with the highest labor efficiency had nearly twice the size of business as those with the lowest labor efficiency, when size was measured by either productive-man-work units or acres in crops. The way to obtain labor efficiency is to have enough productive work to keep the available labor busy throughout the year.

A small but unbroken upward trend was found in production index as the work units per man increased. While there was no apparent reason why farms with higher labor efficiency should have higher rates of production, it does show that the work was done just as well on the farms with high labor efficiency as on those with low labor efficiency.

Labor efficiency can not be accredited with all the increase in labor income. A part of the increase was due to the increase in rates of production, and occurred in spite of an increase in size of business.

The average operator's age decreased as the productive-man-work units per man increased. In the lowest labor efficiency group there were some old men who were probably not able to do the work of a young man.

Relation of Acres of Crops Per Man to Various Factors

The farms studied derived 85.8 per cent of their receipts from the sale of crops. On farms where crops are so important acres of crops per man is a good measure of labor efficiency.

As the acres of crops per man increased there was an increase in the labor income (Table 21). Acres of crops and average work units per farm also increased, but the increase was not consistent. However, it shows that one way of increasing the labor efficiency is to have a relatively large farm business.

Crop index did not increase consistently as the acres of crops per man increased, but the crop index of the group with the highest labor efficiency was 13 per cent higher than that of the group with the lowest labor efficiency.

We can not conclude that all the increase in labor income, as shown in Table 21, was due to labor efficiency. A part of the increase was due to an increase in rates of production accompanied by an increase in size of business.

The relation of operator's age to the acres of crops per man was not as regular as it was with productive-man-work units per man. This was probably due to the intensity of the crops grown. However, there was a tendency for the older men to have a lower labor efficiency than the younger men.

Combined Effect of Size of Business
and Other Factors

Combined Relation of Acres of Crops and Crop Index
to Various Factors

As the crop index increased to average or above, the labor income on the farms with less than 26 acres of crops increased \$26, and on the farms with 26 or more acres of crops it increased \$115 (Table 22).

Table 21.-- Relation between acres of crops per man and various factors on 173 farms having colored operators in Hanstead County, Virginia, 1952

Acres of crops per man	Number of farms	Average acres crops per man	Acres in crops	Average work units per farm	Crop index	Operator's age	Labor income
Less than 9.5	30	7.1	15	162	95	53	\$ -360
9.5 - 12.5	45	11.3	22	207	102	49	-515
12.6 - 15.4	32	14.0	23	257	100	49	-250
15.5 - 18.5	28	17.0	26	224	96	44	-161
18.6 or more	40	22.5	35	307	106	45	-156

Table 22.- Combined relation of acres of crops and crop index to various factors on 173 farms having colored operators in Brunswick County, Virginia, 1932

Crop index	Number		Crop index	Productive- man-work		Productive-man- work units per man	Value of cleared land per acre		Labor income	
	of farms	Acres of crops		man-work units	man-work units		cleared land per acre	cleared land per acre		
Farms having less than 26 acres in crops:										
Less than 100	58	16	80	168	104	104	\$ 55	\$ -255		
100 or more	40	18	124	183	113	113	43	-207		
Farms having 26 or more acres in crops:										
Less than 100	34	55	80	255	142	142	\$ 29	\$ -535		
100 or more	41	37	122	336	151	151	56	-220		

On large businesses it is very necessary to obtain good crop yields. Of the farms with less than 26 acres of crops only 41 per cent had crop yields average or above. This may be compared to the farms with 26 acres or more of crops on which 55 per cent had crop yields average or above.

The value of the cleared land increased \$3 per acre on the small farms as the crop index increased to average or above, and \$4 per acre on the large farms.

Combined Effect of Hog Animal Units and Pounds of Pork Produced Per Hog Animal Unit on Various Factors

In general, the hog enterprise on the farms studied was small. For this reason it seemed desirable to study the effect of pounds of pork produced per hog animal unit on farms with different numbers of hogs to determine the effect of the rates of hog production on labor income.

On the farms with 2 or more hog animal units there was a definite increase of labor income on the farms which produced 1000 or more pounds of pork per hog animal unit over the farms which produced less than this amount (Table 25). The relation held true throughout the analysis, but as the size of the hog enterprise decreased the range in labor income between farms having high producing hogs and those having low producing hogs also decreased. On the small farms it paid to have high-producing livestock but the increase in income was not as great as on the farms that had more hogs.

Size of business, labor efficiency, and crop yields increased as the size of the hog enterprise increased. This accounts for some of

Table 23.-- Relation between number of hog animal units with different rates of production and various factors on 168 farms having colored operators in Nansmond County, Virginia, 1952*

Pork produced per hog animal unit	Number of farms	Hog animal units	Pounds pork produced per hog animal unit	Productive-man-work units		Crop index	Labor income	Labor earnings
				units	per man			
Farms having less than 1 hog animal units								
Less than 1000	24	0.5	545	161	91	96	\$ -282	\$ -105
1000 or more	25	0.5	1,217	167	113	93	-259	- 91
Farms having 1-1.9 hog animal units								
Less than 1000	33	1.4	704	212	118	96	\$ -287	\$ - 74
1000 or more	40	1.4	1,201	256	127	104	-216	26
Farms having 2 or more hog animal units								
Less than 1000	16	3.1	812	294	153	100	\$ -245	\$ 9
1000 or more	25	3.6	1,296	347	167	115	-192	107

* Farms having no hogs were omitted.

the increase in the labor income associated with the increase in hog production. This is logical, since the hog enterprise was supplementary to the production of crops and could be conducted with reducing either the amount of crops or the attention given to crop production and without increasing the labor force.

Combined Relation of Productive-Man-Work Units
and Production Index to Various Factors

In 1952 the colored farmers in Mansemond County who had the larger businesses and low production rates lost most heavily. Of those who had less than average total productive-man-work units, those with less than average rates of production made labor incomes averaging \$65 smaller per farm than those with average or higher rates of production (Table 24). For farms average or above in total productive-man-work units, the corresponding difference in average labor income was \$81 per farm. It was more important to obtain high rates of production when the business was large than when it was relatively small.

When success of the farm business is measured in terms of returns per worker the large businesses with average or better production rates were considerably more successful than the smaller businesses. The small businesses with low production rates made returns per worker averaging only \$41.

Labor efficiency increased as the size of the business increased. The value of the living received from the farm also increased as the size of business increased.

Table 24.- Combined relation of productive man work units and production index to various factors on 175 farms having colored operators in Nansemond County, Virginia, 1952

Production index	Number of farms	Total productive man-work units	Production index	Productive-man-work units per man	Value of farm products furnished	Labor income	Returns per worker
Productive-man-work units less than 254:							
Less than 100	62	165	82	105	\$ 169	\$ -243	\$ 41
100 or more	36	171	125	112	217	-176	113
Productive-man-work units 254 or more:							
Less than 100	35	301	84	144	\$ 249	\$ -320	\$ 92
100 or more	40	344	122	149	262	-259	159

**Combined Relation of Productive-Man-Work Units
and Work Units Per Man to Various Factors**

Large businesses with inefficient use of labor and small businesses with highly efficient use of labor were relatively scarce (Table 25). Of the farms which had less than average total productive-man-work units 70 per cent were below average in labor efficiency as compared with only 27 per cent of the farms which were average or above in size. Both for farms below average and for those average or above in size of business, increased labor efficiency was accompanied by an increase in size of business. The increased labor efficiency was obtained by accomplishing a greater total amount of productive work with a smaller labor force. This shows distinctly that one way of obtaining a good labor efficiency is to have a relatively large business.

Table 25.- Combined relation of total productive-man-work units and work units per man to various factors on 173 farms having colored operators in Nansemond County, Virginia, 1932

Factors above or below average	Num-ber of farms	Produc-tive-man-work units	Produc-tive-man-work units per man	Pro-duc-tion in-dex	Man equi-valent	La-bor in-come	Re-turns per wor-ker
Work units below, work units per man below	69	154	91	95	1.7	\$-267	\$ 49
Work units below, work units per man above	29	194	149	102	1.5	-107	116
Work units above, work units per man below	20	238	99	95	2.9	-458	64
Work units above, work units per man above	55	337	177	107	1.9	-211	157

The increased amount of productive work handled by one man was not the result of doing the work less thoroughly, for the production index was considerably higher on farms using labor more efficiently than on those using labor relatively inefficiently. The result of accomplishing a greater amount of productive work with a smaller labor force, and at the same time obtaining higher rates of production, was an appreciable increase in the average labor income, both for farms below average and for those average or above in size of business.

The labor incomes of farms average or above in size of business averaged lower than those below average in size, both for farms using labor less efficiently than average and for those with average or greater labor efficiency. However, returns per worker is probably more significant in this instance than labor income since 87.5 per cent of all labor employed on these farms was that of the operator and his family, and returns per worker more nearly represent the family labor earnings than does labor income. When the farms are compared on this basis, the relatively large businesses made greater returns per worker than did the relatively small businesses, both for those using labor less efficiently than average and for those with average or greater labor efficiency.

Combined Effect of Age of Operator and Productive- Man-Work Units on Various Factors

On the farms studied the younger men ranked higher than the older ones in size of business, labor efficiency, and production rates, and were therefore more successful (Table 26). This was true

Table 26.-- Combined relation of operator's age and productive-man-work units to various factors on 172 farms having colored operators in Naussemond County, Virginia, 1958

Operator's age	Number of farms	Average operator's age	Average total productive-man-work units	Average work units per man	Production index	Acres crops per man	Labor income
Less than 175 productive-man-work units:							
Less than 48 years old	24	37	140	101	96	11.4	\$ -172
48 years old or more	34	59	134	86	94	9.1	-238
175-265 productive-man-work units:							
Less than 48 years old	33	36	223	130	105	14.5	\$ -208
48 years old or more	28	58	221	116	95	13.3	-306
266 or more productive-man-work units:							
Less than 48 years old	26	39	385	161	109	17.0	\$ -235
48 years old or more	27	57	327	154	105	16.8	-500

whether the younger men were operating a small business, an average business, or a large business.

When size of business was less than 175 productive-man-work units the younger men had a 4 per cent larger business measured in terms of productive days of work than the older men. When size of business was more than 266 productive-man-work units the younger men had an 18 per cent larger business in terms of productive days of work than the older men.

The younger farmers were distinctly more efficient users of labor than the older farmers. This held true whether productive-man-work units per man or acres of crops per man was used as a measure of labor efficiency. When the size of business was 175 to 265 productive days of work the younger farmers accomplished 14 days more of work per man than the older ones.

The young farmers with their larger businesses, and with their better labor efficiency still managed to increase their production rates above those of the older men.

Apparently the increased experience of the older farmers did not have as much influence on labor income as the increased size of business, increased labor efficiency, and increased production rates of the younger farmers.

Combined Relation of Acres and Intensity of Crops Grown to Various Factors

If the acres of crops were less than 19.5, increasing the per cent of work units on cash crops from less than 56 to 56 or more increased the average labor income by \$21, as compared with \$69 for farms having 29.5 or more acres of crops (Table 27). Of the farms which had

Table 27.- Combined relation of acres of crops and per cent of work units on cash crops to various factors on 173 farms having colored operators in Hennessy County, Virginia, 1932

Per cent of work units on cash crops	Number of farms	Acres in crops	Per cent of total work units on cash crops	Total productive-man-work units	Productive-man-work units per man	Acres of crops per man	Crop index	Labor income
Less than 19.5 acres in crops:								
Less than 56	29	14	45	136	95	9	107	\$ -217
56 or more	28	16	66	142	95	10	89	-196
19.5 to 29.4 acres in crops:								
Less than 56	28	24	47	239	126	13	98	\$ -264
56 or more	37	25	66	322	130	14	98	-232
29.5 or more acres in crops:								
Less than 56	17	39	49	347	138	15	105	\$ -343
56 or more	34	41	66	348	155	18	106	-254

29.5 or more acres of crops, 67 per cent had more than 56 per cent of the total work units on cash crops, contrasted with only 49 per cent for the farms of less than 19.5 acres of crops. One advantage of the large farms was that a smaller per cent of the total crop area had to be used for the production of feed crops.

Increasing the intensity of the crops grown was not associated with any significant increase in the total size of business. On the farms having 29.5 or more acres of crops increasing the per cent of work units on cash crops from less than 56 to 56 or more increased the days of productive labor per man by 17.

The percentage of intensive crops grown showed no significant relation to the crop index.

Combined Effect of Three Factors Above and Below Average

Thus far it has been shown that size of business, labor efficiency, rates of production, and the relative importance of intensive cash crops grown were among the most important factors influencing the farm's financial success.

Farms which were above average in size of business, labor efficiency, and rates of production made returns per worker averaging \$181 (Table 26). This may be compared with only \$50 per worker for the farms that were below average in all three factors. The large farms with poor labor efficiency and low rates of production incurred the largest losses made by any group.

With a large business it was very necessary to have good labor efficiency and high rates of production. This is, in general, what happened on the large farm businesses. On the small farms 46 per

Table 28.- Effect on labor income of having different factors above or below the average on 175 farms having colored operators in Mansfield County, Virginia, 1932

Factors above or below average	No. of farms	Productive man-work units	Productive man-work units per man	Pro- duction in- dex	Man equi- va- lent	Value of labor except operator	Value of farm products furnished	Labor income	Re- turns per worker
Work units below, work units per man below, production index below	45	153	90	81	1.7	\$ 167	\$ 164	\$ -280	\$ 30
Work units below, work units per man below, production index above	24	155	94	124	1.7	161	225	-245	84
Work units below, work units per man above, production index below	17	190	150	85	1.5	88	182	-146	78
Work units below, work units per man above, production index above	12	201	156	127	1.5	68	202	- 49	170
Work units above, work units per man below, production index below	9	277	92	72	3.0	508	208	-571	48
Work units above, work units per man below, production index above	11	297	106	115	2.3	410	281	-565	116
Work units above, work units per man above, production index below	26	310	176	83	1.3	179	265	-353	116
Work units above, work units per man above, production index above	29	361	172	125	2.1	289	282	-191	181

cent were below average in both labor efficiency and production rates, while on the large farms only 12 per cent were below average in the two factors. Labor efficiency was below average on 70 per cent of the small farm businesses as compared to only 27 per cent of the large farm businesses.

The amount of farm products furnished the family definitely increased as the size of business increased.

Other Factors

Relation of the Value of Cleared Land Per Acre to Various Factors

As the value of the cleared land per acre increased there was a consistent increase in the average crop index (Table 29). Increasing the value of cleared land per acre from less than \$25.50 to \$44.51 or more was accompanied by a 12 per cent increase in the average crop index.

Table 29.- Relation of the value of cleared land per acre to various factors on 173 farms having colored operators in Nansemond County, Virginia, 1932

Value of bare land per acre	Number of farms	Value of cleared land per acre	Crop index	Productive-man-work units	Productive-man-work units per man	Labor income
Less than \$25.50	62	\$ 17	94	240	135	\$ -219
\$25.50 - 44.50	58	52	101	244	131	-259
\$44.51 or more	53	60	107	217	117	-258

Labor income did not increase consistently as the value of the cleared land per acre increased. On farms with high values of land per acre, it was necessary for the crop index to increase sufficiently to offset the increased charge for interest before the farms could realize an increase in labor income. Apparently this was not the case for colored farmers in Nansmond County, Virginia, during 1932.

Relation of Tenure and Various Factors

Tenants ranked highest in size of business and labor efficiency while the owners and part-owners ranked highest in production rates (Table 53).

There was only 2 years difference in the average age of the tenants as compared with the owners and part-owners.

Although the tenants were lower in production rates the increase in the size of business and the increased labor efficiency increased the labor income on the tenant farms by \$54 over that of the owners and part-owners.

Relation of Education of Operator to Other Factors

Owing to the fact that 78 per cent of the operators who were 48 years old or older, compared to 58 per cent of the operators under 48 years of age, had not progressed further than fourth grade, education has been studied on the farms having operators who were less than 48 years of age. This indicates that the education level of the colored farmers in Nansmond county is rising.

Table 30.- Relation of tenure to various factors on 173 farms having colored operators in Nansemond County, Virginia, 1932

Tenure	Number of farms	Productive-man-work units	Productive-man-work units per man	Production index	Man equivalent	Operator's age	Labor income
Owners and part-owners	103	231	122	102	1.9	49	\$ -266
Tenants	70	239	136	99	1.3	47	-212

Table 31.- Relation of operator's education to various factors on 83 farms having colored operators in Nansemond County, Virginia, 1932

Education	(Farmers under 48 years of age)							
	Number of farms	Productive-man-work units	Productive-man-work units per man	Production index	Operator's age	Labor income	Return per worker	
Less than 5th grade	48	247	133	101	53	\$ -206	\$ 115	
5th grade or more	35	254	134	108	56	-206	126	

Education of the colored farmers in Nansmond county has a very narrow range. Of the total 172 farmers, 24 per cent could not read or write and an additional 8 per cent had never been to school, but could read and write a little. About 60 per cent had never progressed as far as the fourth grade. Only seven operators had gone to high school and 2 finished college. One of these graduated from an agricultural college. His labor income was \$258.

On the farms operated by men under 48 years of age, and with an education of fifth grade or more, returns per worker averaged \$125 as compared with \$115 for those who had less than fifth grade education (Table 31). The more educated farmers had larger total businesses and obtained higher production rates than the others. The higher labor efficiency was on the farms with operators of less than fifth grade education but the difference was insignificant. As the education increased the average age of the operators decreased. The better educated farmers were younger, and had spent more years in school, therefore not having had as great experience in handling labor as had the farmers in the lower educational group.

SUMMARY AND CONCLUSIONS

The colored farmers in Hansemond County suffered severely during 1932 from both low prices which they received for their products and weather conditions.

The average capital for the farms studied was \$2,553, of which 88.2 per cent was invested in real estate. The total capital invested per farm varied from about \$1000 to about \$5000.

These farms were predominantly crop farms; 83.8 per cent of all farm receipts came from the sale of crops. The sale of peanuts alone constituted 52.2 per cent of all farm receipts. The average acres of peanuts per farm was 10.7. All except one farm grew peanuts. The average acres of all crops per farm were 25.8. Total farm receipts averaged \$320 per farm. Total receipts per farm varied from about \$150 to about \$650.

Of the total farm expenses 47.8 per cent was spent for labor. Unpaid family labor constituted 87.3 per cent of the labor expenses, exclusive of operator.

Crop expenses were about one-fourth of the total farm expenses. About 50 per cent of the crop expenses were for fertilizer and lime.

The average taxes paid on these farms were \$25. This is only 1 per cent of the average capital.

Average total expenses amounted to \$427 per farm, or about 33 per cent more than average total receipts per farm.

The average labor income was \$-237.

The most important factors affecting the incomes of colored farmers in this area in 1932 other than unfavorable economic and weather conditions were size of business, rates of production, and labor efficiency.

Size of business was inversely related to labor income on the farms studied in 1932 regardless of the measure of size used.

Higher rates of production were accompanied with consistent increases in labor income on the farms studied.

Labor efficiency was an important factor affecting labor income. As the days of productive work accomplished per man increased a consistent increase in the labor income resulted. The study definitely shows that the way to obtain labor efficiency is to have a sufficient size of business to keep the available labor force busy at productive work throughout the year.

Farmers who had a relatively large size of business, obtained relatively high rates of production, and used their labor more efficiently than average, made returns per worker of \$181. Even in a poor year these large farms were more successful than the small farms.

Tenants were operating larger businesses and obtained better labor efficiency than the owners and part-owners.

Of the 172 farms on which education of the operator was enumerated, 24 per cent reported that they could neither read nor write. An additional 8 per cent reported that they had never attended school but could read and write.

In general, the farmers in Nansemond county who were the most successful in 1932 were those who had a relatively large business with high rates of production and efficiency in the use of labor.

APPENDIX

Table 32.- Summary of Crops Grown on 174 Farms Having
Colored Operators in Nansemond County,
Virginia, 1952

Crops	Number of farms growing	Acres	Yield per acre	Total crop
Corn for grain (bushels shelled) -----	124	852.7	22	18,268
Corn fodder (pounds*) -----	151	980.5	272	267,014
Corn tops (pounds*) -----	10	52	466	25,275
Irish potatoes (bushels) -----	48	28.8	97	2,784
Sweet potatoes (bushels) -----	104	76.45	89	6,819
Tobacco (pounds) -----	3	11	1,155	12,700
Peanuts (pounds) -----	174	1,862.2	1,195	2,220,812
Cotton, in seed (pounds) -----	159	666.25	654	422,685
Cotton, ginned - lint (pounds) -----	5	53.25	471	15,650
- seed (pounds) -----	-	-	-	18,500
Corn and soybeans - corn for grain - (bushels) -----	73	540.7	-	-
- soybeans hogged -----	-	-	-	-
Corn and soybeans - corn for grain - (bushels) -----	3	18	-	-
- soybeans turned under -----	-	-	-	-
Corn and soybeans - corn for grain - (bushels) -----	1	4.5	20	90
- soybeans for grain (bushels) -----	-	-	-	15
Corn and soybeans - corn for grain - (bushels) -----	2	4.5	20	90
- soybeans for hay (pounds) -----	-	-	-	4,500
Corn and cowpeas - corn for grain - (bushels) -----	3	6.5	27	177
- cowpeas for grain (bushels) -----	-	-	-	73
Corn and cowpeas - corn for grain - (bushels) -----	1	2	40	60
- cowpeas for hay (pounds) -----	-	-	-	2,000
Corn and green peas - Corn for grain (bushels) -----	1	3	17	50
green peas (quarts) -----	-	-	-	45
Sweet corn and cowpeas - sweet corn (ears) -----	1	1	1,200	1,200
cowpeas for grain (bushels) -----	-	-	-	3
Sweet corn and soybeans - -sweet corn (ears) -----	1	2	750	1,500
-soybeans hogged -----	-	-	-	-
Soybeans for grain (bushels) -----	3	6.2	10	65
Cowpeas for grain (bushels) -----	15	11.95	11	137
Oats for grain (bushels) -----	1	2	51	62
Green peas (quarts shelled) -----	20	15.8	339	4,672
Snap beans (bushels) -----	5	2.05	51	64
Lima beans (quarts shelled) -----	7	1.4	1,056	1,476

-continued.

Table 32.- Summary of Crops Grown, continued.

Crops	Number of farms growing	Acres	Yield per acre	Total crop
Sweet corn (ears) _____	9	5.8	2,558	9,700
Tomatoes (bushels) _____	2	0.55	182	60
Cabbage (pounds) _____	6	1.22	5,672	6,920
Watermelons (number of melons) _____	5	1.5	5,981	5,175
Canteloupes (number of melons) _____	6	1.4	1,568	2,195
Kale (bushels) _____	2	0.35	76	25
Table beets (bushels) _____	1	-	-	5
Strawberries (crates) _____	5	1.5	91	156
Garden sales _____	3	5	-	-
Sorghum (gallons) _____	27	10.7	68	708
Oat hay (pounds) _____	95	103.15	1,858	191,650
Peanut vine hay (pounds)* _____	145	1,143.5	502	574,050
Soybean hay (pounds) _____	16	21.9	1,799	39,400
Cowpea hay (pounds) _____	4	7.5	2,613	19,600
Soybeans fed green (pounds) _____	1	0.5	8,000	4,000
Soybean and cowpea hay (pounds) _____	1	0.2	4,000	800
Crab grass hay (pounds)* _____	1	1	2,000	2,000
Rye hay (pounds) _____	1	0.2	1,000	200
Timothy hay (pounds) _____	1	0.5	4,000	2,000
Soybeans hogged _____	55	95.92	-	-
Cowpeas hogged _____	6	15.5	-	-
Rye pasture _____	21	55	-	-
Oats pasture _____	1	0.75	-	-
Wheat pasture _____	1	1	-	-
Oats and rape pasture _____	1	0.5	-	-
Mixed clover pasture _____	2	2.2	-	-
Rye, plowed under _____	7	51	-	-
Cowpeas, plowed under _____	1	5	-	-
<u>Trees</u>				
Apples (bushels) _____	886	125	0.5	668
Pears (bushels) _____	65	40	-	101
Peaches (bushels) _____	492	91	-	257
Grapes (bushels) _____	129	85	-	540
Plums (bushels) _____	50	11	-	23
Cherries (bushels) _____	15	7	-	3
Figs (bushels) _____	5	5	-	3.5
Non-bearing trees:				
Apples _____	127	20	-	-
Peaches _____	87	17	-	-
Pears _____	16	9	-	-
Figs _____	3	2	-	-
Grapes _____	1	1	-	-
Pecans _____	1	1	-	-
Other _____	4	1	-	-
Total _____	174	4,492.93		
Less acres double-cropped _____		116.75		
Acres used for crops _____		4,376.2		

* Acres not included in total acres.

Table 53.- Summary of Livestock on 174 Farms Having Colored Operators in Nansemond County, Virginia, 1932

	: Number of : : farms : : having :	: Beginning :			: Purchases :			: End :			: Sold Alive :			: Sold Dressed :			: Butchered :					
		: Number :	: Live wt. :	: Value :	: Number :	: Live wt. :	: Value :	: Number :	: Live wt. :	: Value :	: Number :	: Live wt. :	: Value :	: Number :	: weight :	: weight :	: Value :	: No. :	: Number :	: weight :	: weight :	: Value :
Cows	74	38	-	\$2,685	4	-	\$55	90	-	\$2,750	5	-	\$105	-	-	-	\$-	-	1	-	-	\$27
Heifers 1 yr. old and over	11	8	-	177	2	-	30	11	-	257	-	-	-	-	-	-	-	-	-	-	-	-
Heifers under 1 yr.	12	6	-	67	1	-	10	10	-	118	1	-	5	-	-	-	-	-	-	-	-	-
Calves	36	-	-	-	-	-	-	5	-	38	28	-	205	1.75	-	-	22	1	0.25	-	-	5
Bull calves	2	2	-	15	-	-	-	4	-	24	2	-	23	-	-	-	-	-	-	-	-	-
Bulls	2	2	-	60	-	-	-	1	-	50	1	-	10	-	-	-	-	-	-	-	-	-
Work horses	86	99	-	\$4,286	3	-	\$60	93	-	\$3,785	5	-	\$190	-	-	-	-	4	-	-	-	-
Work mules	136	210	-	\$11,394	12	-	\$985	203	-	\$11,535	12	-	\$231	-	-	-	-	7	-	-	-	-
Goats	3	6	-	\$8	-	-	-	6	-	\$8	-	-	-	-	-	-	-	-	-	-	-	-
Boars	75	61	9,632	\$509	7.5	1,095	\$58	60	9,692	\$487	3.5	600	\$29	-	-	-	\$-	2	16	4,535	3,628	\$174
Sows	154	302	47,085	2,605	18	2,180	115	311	49,355	2,621	4	550	26	1.5	310	220	12	16	36.5	7,115	5,589	286
Other hogs	162	227	27,175	1,229	18	1,545	57	426	50,875	2,029	62	5,345	176	227	39,335	30,434	1,410	23	1,392	195,478	151,796	8,555
Pigs	158	197	4,080	335	57	1,630	116	281	8,545	511	125	3,745	273	-	-	-	-	295	-	-	-	-
Chickens	166	3,906	-	\$2,015	7	-	\$4,402	-	\$1,954	2,754	-	\$1,061	192	-	-	\$78	681	4,916	-	-	-	\$1,866
Other poultry	2	6	-	11	-	-	-	7	-	12	5	-	12	-	-	-	-	-	-	-	-	-
Total livestock				\$25,396			\$1,490		\$26,155			\$2,346				\$1,522						\$10,913

Table 34.- Summary of Total Capital on 174 Farms
Having Colored Operators in Nanse-
mond County, Virginia, 1952

	Total	
	Beginning	End
Operator's dwelling	\$ 97,811	\$ 94,840
Other dwellings	8,076	7,820
Other buildings	27,615	28,261
Crop land	164,720	164,720
Other land	95,429	95,050
Total real estate	\$391,651	\$386,691
Machinery	\$ 13,771	\$ 12,408
Livestock	25,396	26,155
Feeds and supplies	14,119	12,291
Total	\$444,937	\$437,545

Table 35.- Summary of 174 Farms Having Colored Operators in Nansmond County, Virginia, 1932

	Value	Value
Receipts:		
Crops	\$ 46,584	
Livestock products	5,114	
Livestock increase	5,157	
Miscellaneous	2,662	
Total receipts		\$ 55,697
Expenses:		
Current expenses	\$ 65,912	
Feed and supplies decrease	1,828	
Real estate and equipment decrease	6,574	
Total expenses		\$ 74,314
Farm income		\$ -18,617
Interest*		22,579
Labor income		-41,196
Labor earnings**		52,792
Value operator's time***		41,651
Return on capital		-60,248
Per cent return on capital		

* Interest was charged on the average real estate capital at 5 per cent and on the average working capital at 6 per cent.

** Labor income plus the value of farm products furnished plus the value charged for all labor including board.

*** Value as estimated by the operator. What he would have had to pay to hire someone to do the work which he did.

Productive-Man-Work Units Used

Crops

The acres of each crop were multiplied by the units assigned below and products were added.

<u>Man-work units per acre</u>	<u>Crops</u>
5.0	Corn for grain
0.5	Corn fodder (blades)
4.0	Corn fodder (whole plant)
0.5	Corn tops
3.0	Corn hogged
4.0	Corn silage
8.0	Irish potatoes
10.0	Sweet potatoes (hogged only)
13.0	Sweet potatoes (harvested)
45.0	Tobacco
7.0	Peanuts picked (whether hogged or not)
5.0	Peanuts (hogged only)
13.0	Cotton
3.0	Corn and soybeans - corn for grain
1.0	Add for - soybeans hogged
3.0	- soybeans for grain
2.0	- soybean hay
1.0	- soybeans plowed under
5.0	Sweet corn and soybeans - sweet corn
	Add for soybeans same as above
2.0	Corn and soybeans - corn hogged
	Add for soybeans same as above
	Corn and cowpeas - same as corn and soybeans
18.0	Green peas
15.0	Snap beans, lima beans, cucumbers
8.0	Sweet corn
12.0	Tomatoes, cabbage, peppers
15.0	Watermelons and cantaloupes
15.0	Salad crops
25.0	Strawberries
10.0	Turnips, beets, rutabagas
15.0	Sorghum
3.0	Cowpeas or soybeans for grain
2.0	Small grains threshed
2.0	Soybean hay or cowpea hay
2.0	Small grains cut for hay
0.2	Peanut vine hay
1.5	Crimson clover hay
1.5	Mixed small grains and annual legumes for hay
1.0	Timothy, Lespedeza, crab grass, and other hay
1.0	Soybeans or cowpeas hogged
1.0	Small grains pasture
1.0	Salad crops pasture
0.5	Clover pasture

-continued.

Work Units on Crops (continued).

<u>Man-work units</u> <u>per acre</u>	<u>Crops</u>
0.5	Lespedeza pasture
1.0	Pasture mixtures
1.0	Sudan grass pasture
3.0	Fruit trees per acre
0.1	Fruit and nut trees, bearing age, per tree
10.0	Grapes per acre
0.5	Scuppernong grapes, bearing age, per vine
0.05	Non-bearing fruit and nut trees, per tree
0.5	Sweet potato slips sold, per 1,000
25.0	Garden, per acre
1.0	Garden sales per \$20.00 sales
0.5	New seedings, small grains and legumes
0.5	Green manure crops, all kinds

Livestock

The number of each kind of stock was multiplied by the units assigned below. The average numbers inventoried were used unless it was known that some other number more correctly represented the number actually handled. The actual or estimated number of hogs and pullets raised during the year was used. Additional work units were added for the butchering and curing hogs.

<u>Man-work units per head</u>	<u>Kind of livestock</u>
18.0	Cows
2.5	Heifers
2.5	Bulls
2.0	Colts
0.5	Goats
0.5	Boars
5.0	Sows
1.5	Other hogs raised
0.5	Per hog sold slaughtered
0.4	Per 100 pounds fresh meat sold by piece
0.5	Per 100 pounds cured meat sold
0.55	Hens and other mature poultry
0.02	Chickens or fowls raised
0.5	Bees, per hive

Miscellaneous

For the productive work represented by miscellaneous receipts, the following units were used:

<u>Man units</u>	<u>Sources of miscellaneous receipts</u>
1	Labor off farm: man, man and team, machine, per day
1	Trucking per day
1	jury, etc., per day
1	Stock boarding or pasturing, per day of man labor.
3	Sawed lumber, per 1000 board feet.
1	Post, for 25 posts
3	Wood, per cord

Animal Units Used

The average number of the beginning and ending inventories was multiplied by the corresponding units. The actual number of hogs and pullets raised during the year was used.

<u>Units per head</u>	<u>Kind of livestock</u>
1.0	Cows
0.5	Heifers
0.5	Bull calves to be raised
1.0	Bulls
1.0	Horses and mules
0.5	Colts and ponies
0.2	Brood sows and boars
0.1	Hogs raised
0.01	Mature poultry
0.005	Chickens raised