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To the Graduate Council:

I am submitting herewith a thesis written by Paul E. Carr entitled "Plans and Performance on Farms at the Ames Plantation." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics

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PLANS AND PERFORMANCE ON FARMS AT THE AMES PLANTATION



A THESIS

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The Graduate Council
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
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by
Paul E. Carr
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P. E. C.

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CHAPTER I

THE PROBLEM

Statement of the Problem

The planning of a farm operation so as to utilize the available resources at the most profitable level is a problem confronting all farm owners and farm managers. This is a goal that cannot be achieved and then forgotten, but it is a never ending process because of changes in prices, production methods, weather, economic and social institutions, and changes in various other factors affecting the success of a farming operation. An effort must be made each year to improve the operation of any farm business. In order to do this, a farm manager must be able to analyse his farming operation to determine where changes can be made so that a more profitable farm business results. It is important that he not only know where there were deviations in the farm plan from the actual results, but he must be able to give an explanation for these deviations.

Objectives

The objectives of this study are to make an analysis of the farming operations on five farming units by comparing the estimated production, costs, prices, and income with the actual results obtained in 1957 and 1958 and to observe some factors affecting the divergence of the actual results from those estimated.

Method or Procedure

The data used in this study consists of the plans and the records of the actual results of operations on five farming units at the Ames Plantation.

A brief history of the Ames Plantation is presented including its location, how it was utilized prior to its availability to the University of Tennessee, and how it became available for use by the University of Tennessee. The history of the plantation is followed by a short discussion of the farm management project including the reasons for the initiation of the project and its specific objectives.

A brief discussion is made concerning the actual planning of these five farms included in this study including the reasons for the selection of the various enterprises.

An explanation is given for the deviation between the estimated and actual results of each farming operation in 1957 and 1958. The deviation between the estimated and actual results which are discussed includes livestock numbers raised and sold, crop acreage, prices, income, and expenses. Included in this discussion is a comparison of the estimated and actual returns to investments and returns to management and family labor on each farm in 1957 and 1958.

Other factors affecting the actual results of the operations on each of the five farms are discussed. An analysis of the time of sale and income from swine is made in which the cash receipts from the sale of swine at various times throughout the year is compared with the cash receipts that could have been obtained if sold at other times during the year.

A comparison is made of cotton production at two levels of mechanization in which the economic implications of producing cotton at each level of mechanization are discussed.

The method of financing used by the landlord and tenant is discussed. Special emphasis is placed on the type of credit used by the tenants. A discussion is also made concerning the tenant-landlord arrangement on each farm. Major emphasis is placed on the extent to which the agreement induces incentive on the part of the tenant, based primarily on the net returns to the tenant.

There may be other factors affecting the divergence of the actual from the anticipated results, however, the factors indicated above appear to be the most pertinent.

CRANES OF CREST

CHAPTER II

HISTORICAL REVIEW

Location and Previous Operation

The Ames Plantation is located in the Grenand-Loring-Memphis soil association area in West Tennessee in Fayette and Hardeman counties, about sixty miles east of Memphis and ten miles north of the Tennessee-Mississippi boundary. The plantation consists of approximately 18,500 acres of land with overall dimensions of ten miles east to west and eight miles north and south. The property was purchased in tracts from time to time by the late Hobart Ames of North Easton, Massachusetts, the first acquisition being made in 1903 and last in 1937. The Plantation became available for use by the University of Tennessee College of Agriculture in 1950 upon the death of Mrs. Julia C. Ames. Her will stipulated that the plantation was to be made available to the University of Tennessee College of Agriculture and to be used for research and educational purposes.¹

Mr. Ames' primary interest in buying the Ames Plantation was to use it for hunting purposes. From the time of its purchase until the death of Mr. Ames in 1945, and even until the death of Mrs. Ames, the

¹John Arthur Ewing, Planning the Ames Plantation, (Harvard University: Cambridge, Massachusetts, June, 1956) p. 76.

plantation was, for all practical purposes, a hunting preserve, with agricultural activities taking a secondary role.²

The main interest that Mr. Ames had in agriculture was in raising beef cattle. He became interested in the Aberdeen-Angus breed of beef cattle and developed some of the better blood lines of this breed in the United States.³

The small tenant farms that were located on the plantation when it was purchased by Mr. Ames were not disturbed. However, he did insist that the tenants neither cut any timber nor destroy any bird cover. In 1954 there were fifty-four tenants on the plantation operating a total of 1,321 acres of cropland. There were five tenant farms under ten acres in size, and none of the farms were larger than forty-nine acres (Table I). Due to the fact that Mr. Ames did not want any timber to be destroyed, the tenants could not expand their operations very much and had to survive on the amount of land that they already had or move off the plantation. As a result of this policy followed by Mr. Ames, over half of the 18,500 acres on the plantation was scarcely used by the tenants when the University of Tennessee obtained the use of the plantation in 1950.⁴

~~A few of the tenants with larger farms raised both crops and~~

²Ibid., p. 76

³Leigh Hugh Hammond, Income Possibilities on Farms in the Cotton Belt of West Tennessee, (Thesis, M. S. University of Tennessee, Aug., 1955) p. 22

⁴Leon Dixon, Characteristics of Population and Tenant Farms on the Ames Plantation, (Unpublished Report, Coll of Agric., Univ. of Tenn., 1954)

TABLE I

RELATION OF SIZE OF FARM TO ACRES OF VARIOUS CROPS GROWN ON
54 TENANT AND SHARECROPPER UNITS, AMES PLANTATION, 1954

		Size of Farms (Acres) ^{1/}				Total All Farms	Average All Farms
Crops	Under 10	10 to 19	20 to 29	30 to 39	40 to 49		
(Acres of Crops)							
Cotton	5.2	9.0	11.7	17.1	22.2	686	12.7
Corn	-	4.8	10.0	14.7	18.8	523	9.7
Hay	-	1.0	2.3	1.5	1.3	75	1.4
Sorghum	-	.1	.9	1.2	.9	38	.7
Total	5.2	14.9	24.9	34.5	43.2	1,322	24.5

^{1/} There were 5 farms under 10 acres; 15 farms with 10 to 19 acres; 14 farms with 20 to 29 acres; 16 farms with 30 to 39 acres, and 4 farms with 40 to 49 acres.

A few of the tenants with larger farms raised both crops and livestock, but most of the tenants raised only cotton as their source of cash income. A total of 686 acres of cotton was grown on the plantation in 1954, with a range of 5.2 to 22.8 acres per farm or an average of 12.7 acres. An average of ten bales of cotton per farm resulted in an average gross income of about \$1,700. Included in this \$1,700 was \$250 to \$300 to be paid to the plantation for rent.⁵

The second most important crop produced on the plantation in 1954 was corn with a total of 523 acres or an average of 9.7 acres per farm (Table I). Most of the corn produced was fed to livestock and used for family consumption with very little being sold.

Other crops produced on the plantation consisted of 75 acres of hay crops and 38 acres of sorghum (Table I). All of the hay and part of the sorghum was fed to livestock. Some of the sorghum was used to make syrup both for sale and home use. Pasture crops consisted primarily of native grasses and lespedesa.

There were approximately 159 milk cows and 137 other cattle, mostly calves, owned by the tenants and kept on the operating units in 1954. The cattle were of mixed breeds and, for the most part, poor in quality. The cows were kept to produce milk for family use, and the calves not needed as replacements were sold.⁶ A few tenants had a small commercial herd to raise and sell calves.⁷

⁵Ibid., p. 6

⁶John Arthur Ewing, Op.Cit., p. 96

⁷Leon Dixon, Op.Cit., p. 7

The tenants had a total of 607 hogs or an average of eight hogs per farm in 1954. Most of the hogs produced were used for home consumption, but some of the tenants sold some fat hogs and a few pigs.⁸

The principal source of power on the tenant farms consisted of horses. A total of 146 horses and mules were owned by the tenants in 1954 or an average of 2.7 per farm (Table II). Only six tenants on the plantation used tractors as a source of power for farming in 1954. These tenants had a total of eight tractors. No farms under twenty acres in size had tractors. The larger farms, consisting of thirty acres or more, had seven of the eight tractors on the plantation.⁹

Development of the Farm Management Project

In view of the fact that approximately one-half of the total Ames Plantation was operated by tenants in 1956, it was recognized that in order to improve the financial position of the plantation as a whole it would be helpful to increase the productivity of these units. The University of Tennessee and the trustees under the will of Julia C. Ames made and entered into an agreement on the 18th day of March, 1954 which stated:

It is the desire and intent of the Ames Trustees and the University of Tennessee to carry out the provisions of Mrs. Julia C. Ames' will by using the trust fund provided in paragraph seven of the Will for educational research and educational demonstration purposes consistent with good sound management practices.

⁸Ewing, Op.Cit., p. 96

⁹Dixon, Op.Cit., p. 9

TABLE II

KINDS AND NUMBER OF LIVESTOCK OWNED BY ALL TENANTS,
SHARECROPPERS, AND WAGE HANDS ON
THE AMES PLANTATION IN 1954

Kind of Livestock	Number
Milk cows	159
Other cattle	137
Brood Sows	69
Pigs	373
Hogs	165
Workstock	146
Total all Livestock	1,049

Three major objectives were set forth in planning the farm management project. These objectives were as follows:

- (1) To increase the total production on tenant units.
- (2) To provide rental arrangements which would allow both the tenant and plantation to share in this increased production.
- (3) To work out the best methods of financing the needed adjustments to attain a higher level of production.

Although these objectives applied to all of the farms on the plantation, more emphasis was placed upon the five farms included in this study as they were farmed more intensively than other tenant operated farms.

Dr. Thomas J. Whatley, Program Director of the Ames Plantation, assumed major responsibilities in planning the individual farms under this project. Mr. R. J. Goddard was employed by the University as supervisor for the farm management project, with special emphasis being placed on the five farms included in this study.

CRANES CREST

CHAPTER III

MAKING THE PLANS FOR THE FIVE FARMS

The first step in planning these five farms was to select the crops best suited to the available land resources, depending upon the cost in producing these crops, the price received, and the production response obtained. The principle of placing continuous row crops or the highest valued cash crops on the best soils such as Memphis, Loring, and Tigrett silt loams with slopes of not more than 5 per cent and cover crops on the steeper land to prevent erosion was followed. The selection of the cash crops and livestock enterprises which would give the greatest net returns in the short run and require a low capital outlay were the basic objectives of the planning process.

Cotton was selected as the first major crop since it is one of the highest valued crops grown in the area on a sizeable acreage. Since these farms were to serve as experimental units, it was decided that the cotton acreage should be similar to the average acreage found on farms in the surrounding areas. The number of tenants on the plantation was reduced due to the tenants leaving the plantation to seek work elsewhere. The cotton allotment on these units that had been vacated was reallocated to the remaining farms. This made it possible to obtain the desired cotton acreage on each of the five experimental units. The amount of labor on the individual units was also a factor in determining the cotton acreage.

Because of the arbitrary restrictions placed on cotton acreage and the unique combinations of resources on the individual units, other

crops had to be considered. The final organization of these additional crops took into consideration the relationship between enterprises (competitive, complimentary, and supplementary), production response, the cost of production, and the price of the various crops, and the available resources on each individual farming unit.

The next highest valued cash crop for which there was available land resources was corn. Since hogs were bringing approximately \$18.50 per hundred weight when the plans were made, it was felt that producing corn and feeding it to hogs offered the second highest source of income with the quickest returns. Hog prices during several preceeding years were studied and the conclusion was reached that fairly good returns could be obtained from swine production, recognizing the fact that there would be years when prices would be relatively low. It was noted that corn and hogs would be complementary enterprises and some corn could be hogged off which would result in a reduced labor requirement.

Soybeans were included in the plans for some of the farms because of the low labor requirement and the high rate of returns per hour of labor used. It was felt that soybean production would not be too competitive to the other enterprises and, in the event of low prices being obtained for cotton and hogs, the income from soybeans would cushion this reduced income.

In addition to being desirable from the standpoint of a low capital outlay and quick returns on investments, the tenants were already familiar with corn and cotton production and could do a better job in producing these crops than they could if enterprises were used

with which they were not familiar. A low capital outlay and quick returns on investments were particularly desirable because of limitations in the amount of capital available for initial investments and for carrying out the various operations.

Beef cattle and dairying were considered for all of the farms as was poultry (laying hens) and sheep on some of the farms. However, cotton, corn, and hogs were selected on all of the farms except farm number I because of the relatively small capital outlay and quick returns on the investments.

Since the West Tennessee Experiment Station agreed to furnish thirty milk cows to be used in its bull testing program, a grade "A" dairy was established on Farm I. It was felt that the tenant could operate the dairy and at the same time produce some cotton, corn, and hogs.

Forage consuming livestock and possibly other enterprises will be brought on to each of the farms in the future if the rate of returns is high enough. It was felt that it would be best not to overburden the tenants or make the farming operations too complex at the beginning but to gradually increase the intensity of the operations as the tenants gain experience.

It was recognized that a high level of management and the introduction of new technology would be required on the tenant units if the proposed systems of farming were adapted. The University of Tennessee employed Mr. R. J. Goddard, who had previously worked as a farm manager, to supervise the tenants. In the early stages it was essential for him to provide guidance in various phases of the operations such as adjusting

the plows and planters, vaccinating hogs, and planning rations. After the first year not as close supervision was required and it was anticipated that other farming units could be added to this project. It was thought that some indication could be obtained as to how many farmers could be supervised by a qualified man in this position. The experiences gained here will be valuable to the Agricultural Extension Service, other governmental agencies, and professional farm managers in providing similar services to landlords and/or tenants.

CRANES & CREST

CHAPTER IV

PLANS AND OPERATIONS ON EACH OF THE INTENSIVE FARMING UNITS

When the areas were selected for the five intensive farming units, they were in an undeveloped condition with much of the land in forest or in small fields which were not adapted to mechanized agriculture. There were no fences, buildings, or machinery and equipment of any substantial value on any of the farms. Therefore, it was necessary to spend a considerable amount of time and money in clearing land, constructing buildings, purchasing equipment, and making other improvements in order to get the farms ready for operation.

Plans for a given year were made in the summer, usually August, of the preceeding year. Soil tests made in 1957 resulted in some changes in fertilizer rates applied to crops in 1958. Changes made in the plans because of other reasons will be discussed later in this chapter.

Corn, cotton, and hogs are the major enterprises on all of the farms with the exception of Farm I, in which case the major enterprise is a dairy unit (Table III). Farm II also has a supplementary strawberry enterprise.

There are four different share-lease arrangements between the landlord and tenants among the five farms, with Farms II and V having the same type of arrangement. It should be pointed out that the cost of labor hired by the landlord to perform work not directly affecting the tenant is paid by the landlord. This labor is used on roads, fencing, and primarily capital improvements.

TABLE III

THE TYPE OF FARMING OPERATION AND SHARE-LEASE ARRANGEMENT ON
INTENSIVE FARMING UNITS, AMES PLANTATION, 1957 AND 1958

	Farm I	Farm II	Farm III	Farm IV	Farm V
Type of Farming Operation	Dairy Cotton Corn Hogs	Cotton Corn Hogs Strawberries	Cotton Corn Hogs	Cotton Corn Hogs	Cotton Corn Hogs
Type of lease arrangement $\frac{1}{2}$	Landlord: 1/2 of income and expenses	Landlord: 1/3 of income and expenses	Landlord: 1/4 of income and expenses from corn and hogs 1/3 of income and expenses from cotton	Landlord: 1/4 of operating costs and income	Landlord: 1/3 of operating costs and income
	Tenant: 1/2 of income and expenses	Tenant: 2/3 of all income and expenses	Tenant: 3/4 of income and expenses from corn and hogs 1/3 for cotton	Tenant: 3/4 of operating costs and income	Tenant: 2/3 of operating costs and income

$\frac{1}{2}$ Tenants furnished all of the labor, equipment, and fuel costs incurred in the farming operations except for Farm I, in which case these costs are divided equally between the landlord and tenant.

Soil Resources and Land Use

The type of soils found on all of the farms is very similar. The major soils consist of 20BN (Memphis silt loam, eroded undulating phase), 20CP (Memphis silty clay loam, severely eroded rolling phase), 22BN (Loring silt loam, eroded undulating phase), 22CP (Loring silty clay loam, severely eroded rolling phase), 35D (Gullied land, hilly, erosion stabilized), and 37D (Gullied land, rolling, erosion active). Other soils on the farms in smaller amounts consists of 2 (Tigrett), 3 (Tigrett), 4 (Briensburg), 6 (Dyer), 22BL (Loring silt loam, undulating phase), 28AL (Henry silt loam), 30CP (Lexington silty clay loam, severely eroded rolling phase), 26BN (Galloway silt loam, eroded undulating phase), and 35G (Gullied land, rolling, erosion stabilized). (See Appendix B for soil and land use maps on each of the farms) The total acreage of each land class on each farm is shown in Table IV.

The principle of allocating the scarce, best land to the most profitable crop is followed with row crops, such as corn and cotton produced on Loring, Memphis, Briensburg, and Tigrett soils with less than a 5 per cent slope. Because these soils are highly productive and there is less risk of a crop failure, these crops will remain on these soils over time. Temporary pasture consisting primarily of millet followed by oats or wheat is produced primarily on Memphis and Loring soils with a "B" slope and in some places on "C" slopes. The temporary pasture is located as near the barn and house as possible for added convenience. The remaining cropland with a "C" slope or above is placed in permanent pasture consisting primarily of alfalfa, ladino clover, and orchardgrass

TABLE IV

TOTAL ACRES OF THE DIFFERENT LAND CLASSES AND TOTAL ACRES
OF CROPLAND AND WOODLAND ON EACH INTENSIVE FARMING
UNIT, AMES PLANTATION

Land Class	Farm I	Farm II	Farm III	Farm IV	Farm V
I	165	148	103	70	112
II	12	30	2	15	21
III	60	68	35	15	67
IV	12	95	0	0	14
V	75	43	58	111	143
Total	324	384	198	211	357
Cropland Acreage	180	188	98	77	92
Woodland Acreage	144	196	100	134	265

while some pasture consists entirely of lespedesa. With the exception of Farm I, where winter and summer supplementary pasture is produced on the same land, there is little land on which two crops are produced each year. There was no small grain following corn on any of the farms except for approximately twelve acres on Farm I. No winter cover crop followed cotton on any of the farms. The land on these farms will be cropped more intensively in the future with the addition of additional crops and/or livestock enterprises.

Farm I

Tenure

All expenses and income, except income derived from custom work and forestry work, are divided on an equal basis (Table III). The forestry work and custom work are performed by the tenant and all of the receipts from these sources go to the tenant.

Labor

This farm is operated by the tenant and his family with a labor force equal to approximately 1.5 man equivalents. Additional labor was hired by the tenant for picking cotton and performing miscellaneous work at a cost of \$672 in 1957 and \$287 in 1958. The cost of labor hired by the landlord totalled \$58 in 1957 and \$221 in 1958.

Operations on Farm I in 1957

Crops. Crops produced in 1957 consisted of cotton, corn for grain and silage, oats, and pasture consisting of alfalfa and orchard-grass, fescue and ladino clover, millet, and oats (Table V). Corn

TABLE V

ESTIMATED AND ACTUAL ACREAGE AND YIELD PER ACRE OF CROPS
PRODUCED ON FARM I, AMES PLANTATION, 1957 AND 1958

Crops	1957				1958			
	Acres		Yield/Acre		Acres		Yield Per Acre	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn (bottom)	10	26	60 bu.	40 bu.	21	26	60	55
Corn (hill)	--	--	--	--	12	16	40	30
Cotton	12	12	500 #	400 #	12	12	500	500
Oats	34	--	40 bu.	--	(16) $\frac{1}{2}$	(25)	50	30
Hay	20	20	1 T.	3/4 T.	--	--	--	--
Silage (corn)	8	2	15 T.	14 T.	8	15	10T.	12T.
Silage (corn and cane)	8	12	15 T.	10 T.	13	--	12T.	--
Fescue and ladino	9	9	Graze	Graze	9	9	Graze	Graze
Millet	8	6	Graze	Graze	20	26	Graze	Graze
Oat pasture	(39) $\frac{1}{2}$	29	Graze	Graze	--	(31)	Graze	Graze
Oats (seeded on lesp.)	(28) $\frac{1}{2}$	21	Graze	Graze	--	(15)	Graze	Graze
Alf. & Orch.grass	--	8	--	--	(14) $\frac{1}{2}$	(28)	Graze	Graze
Oats following corn	--	--	--	--	(13) $\frac{1}{2}$	(16)	Graze	Graze

() double cropped

acreage was sixteen acres greater than planned in 1957 because more land was cleared before planting time than anticipated. As a result of this increase in corn acreage, total corn production was 440 bushels more than estimated. Cotton produced on twelve acres totalled 1,200 pounds of lint less than estimated. It was decided not to seed thirty-four acres of oats in the spring of 1957 as planned, because of the competition for labor in land clearing, establishing pastures, fencing, and making other improvements.

A new tenant was selected for this farm in the fall of 1957 as a result of the death of the first tenant's wife. With the remaining responsibilities the new tenant had on the farm he operated in 1957, he could only devote part of his time to the operation of the intensive unit in the latter part of 1957. The extra amount of work placed upon the new tenant prevented him from doing a good job in harvesting the cotton which was a contributing factor in the low yield of cotton.

Livestock. A total of thirty milk cows was furnished the dairy unit by the West Tennessee Agricultural Experiment Station at no cost to the tenant or landlord (Table VI).¹⁰ This enabled the Experiment Station to expand its bull testing program in dairying, since there was not enough land available at the Station to keep all the dairy cows and heifers needed for this program. Since the University was helping out in this way, it was decided to establish a grade "A" dairy. Milk sales were begun in late August, 1957, with a total of 54,442 pounds sold compared

¹⁰The estimated value of these cows has been treated as an investment in further discussions of this unit.

TABLE VI

A COMPARISON OF THE ESTIMATED AND ACTUAL LIVESTOCK NUMBERS ON
FARM NUMBER I, AMES PLANTATION, 1957 AND 1958

Livestock	1957		1958	
	Est.	Act.	Est.	Act.
Purchases:				
Milk cows	30	30	-	-
Swine breeding stock	-	4	-	1
Sales:				
Veal	-	1	-	-
Swine	-	-	21	11
Cows	-	-	-	1
Heifers raised	13	17	-	18
Sows on hand 12-31	-	3	3	4
Boars on hand 12-31	-	1	1	1
Other Hogs 12-31	-	-	21	26
Workstock 12-31	2	2	2	2

with an estimated 46,664 pounds.

Livestock on hand December 31, 1957, and owned jointly by the tenant and landlord consisted of four head of swine breeding stock which were purchased during the year and 17 heifers raised which were valued at a total of \$1,487. In addition, there were two head of workstock owned by the tenant valued at \$100 each.

Capital Investments. Capital investments totalled \$16,356 in 1957 compared with an estimated \$11,079 (Table VII). This increase in investments was due primarily to increased investments in a dwelling, milking parlor, and investments not included in the plans, consisting of an implement shed, silo, and loafing barn.

Income and Expenses. Total cash income plus feed and livestock increase totalled \$6,588 compared with an estimated \$7,658, or total income was \$1,070 less than estimated (Figure 1). Crop receipts were \$688 less than estimated because both cotton yield and grade were lower than anticipated. No income was realized from forestry work even though \$200 cash income was anticipated from this source. Feed and livestock in inventory was \$344 less than estimated (Table VIII). This decrease in inventory was a result of feeding more silage than expected, and no oats were on hand as anticipated since none were seeded as planned. On the other hand, livestock receipts were \$142 more than estimated as a result of the production of 7,760 pounds more milk than was estimated.

Total cash and non-cash costs were \$5,631 while these costs were estimated to be \$5,504. Total cash costs were \$5,269 or \$110 more than estimated, with fertilizer, fuel, labor, and equipment rental being the

TABLE VII

A COMPARISON OF THE TENANTS AND LANDLORDS' ESTIMATED AND ACTUAL COST OF CAPITAL
INVESTMENTS ON FARM NUMBER 1, AMES PLANTATION, 1957 AND 1958

Kind of Investment	1957 Cost		1958 Cost		Total '57 & '58		1957 Depr.		1958 Depr.		Total Depr.	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
(Landlord)												
Machinery & Equip.	\$ 770	\$ 618	\$ 330	\$ 275	\$1,100	\$ 893	\$ 99	\$ 42	\$ 82	\$ 168	\$ 181	\$ 210
Land Clearing	-	740	-	140	880	-	-	62	-	-	-	62
Fencing	473	270	293	456	766	726	35	9	31	50	66	59
Well	816	816	-	-	816	816	61	81	81	81	142	162
Buildings:												
Dwelling	800	2,319	800	837	1,600	3,156	30	58	88	158	118	216
Dairy Barn & Milk- ing Parlor	1,750	2,525	-	101	1,750	2,626	66	42	42	131	108	173
Loafing Barn, Bull Pens, Implement Shed	-	2,462	-	160	-	2,622	-	41	41	131	41	172
Silo	-	383	100	85	100	468	-	13	8	47	8	60
Milk Cows	3,000	3,000	-	-	3,000	3,000	-	-	-	-	-	-
Milk Quota	-	-	-	600	-	600	-	-	-	-	-	-
Total Landlord	7,609	13,133	1,523	2,654	10,012	14,907	291	348	373	766	664	1,114
(Tenant)												
Milk Cows	3,000	3,000	-	-	3,000	3,000	-	-	-	-	-	-
Milk Quota	-	-	-	600	-	600	-	-	-	-	-	-
Machinery & Equip.	470	223	330	275	800	498	54	14	53	41	107	55
Total Tenant	3,470	3,223	330	875	3,800	4,098	54	14	53	41	107	55
Grand Total	11,079	16,356	1,853	3,529	13,812	19,005	345	362	426	807	771	1,169

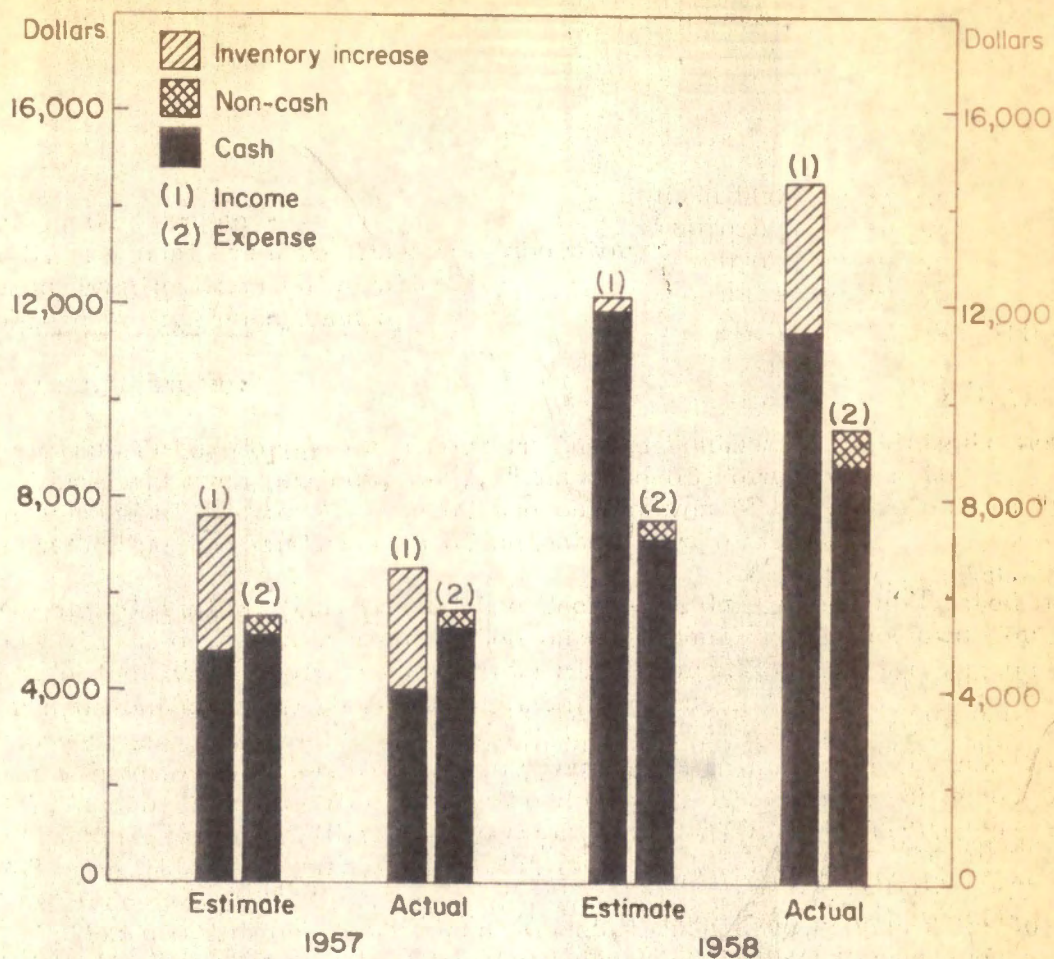


Figure 1. A comparison of the estimated and actual income and expenses on Farm I, Ames Plantation, 1957 and 1958.

TABLE VIII

A COMPARISON OF ESTIMATED AND ACTUAL VALUE OF LIVESTOCK AND FEED IN INVENTORY ON
FARM NUMBER I, AMES PLANTATION, DECEMBER 31, 1957 AND 1958

	Landlord				Tenant				Total			
	1957		1958		1957		1958		1957		1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn	\$ 344	\$ 531	\$ 512	\$ 650	\$ 344	\$ 531	\$ 513	\$ 650	\$ 688	\$ 1,062	\$ 1,025	\$ 1,300
Silage	640	210	240	180	640	210	240	180	1,280	420	480	360
Oats	300	-	-	130	300	-	-	130	600	-	-	260
Hay	50	200	200	150	50	200	200	150	100	400	400	300
Straw	-	-	-	40	-	-	-	40	-	-	-	80
Swine	-	106	231	344	-	106	231	344	-	212	462	688
Heifers	97	150	250	1,190	98	275	250	1,440	195	425	500	2,630
Workstock*	-	-	-	-	200	200	200	200	200	200	200	200
Total	1,431	1,197	1,433	2,684	1,632	1,522	1,634	3,134	3,063	2,719	3,067	5,818

* Workstock on hand January 1, 1957.

the major items of cash cost. These four expense items represent a combined total of approximately \$3,135. Non-cash costs totalled \$362 or \$17 more than estimated. Although capital investments were about 50 per cent higher than estimated, a considerable amount of these investments were made in the latter part of 1957 and had a relatively small depreciation cost.

Net cash income was approximately \$1,200 compared with an estimated -\$364, or the cash loss was \$836 more than estimated.

Net farm income was \$957 in 1957 compared with an estimated \$2,154 or \$1,197 less than estimated. This decrease in net income came about by having \$726 less cash income, \$769 less feed and live-stock in inventory, and \$127 more total costs than estimated. (See Table XXXI in Appendix A for detailed estimated and actual income and expense statement).

Operations on Farm I in 1958

Crops. Crops produced in 1958 consisted of cotton, corn for grain and silage, oats for grain, and pastures consisting of alfalfa and orchard grass, fescue and ladino clover, millet, and oats. Corn produced on forty-two acres, nine acres more than planned, totalled 1,910 bushels or 170 bushels less than estimated (Table V). Cotton produced on twelve acres totalled 6,058 pounds of lint cotton.

Approximately sixty acres of temporary pasture and twenty acres of permanent pasture were established. The temporary pasture consisted of thirty-four acres of oats and twenty-six acres of millet, while the permanent pasture consisted of alfalfa and orchard grass.

Livestock. A total of 173,249 pounds of milk were produced in 1958 compared with an estimated 222,000 pounds, or total milk production was 48,751 pounds less than estimated.

It was planned to have the sows on this farm farrowing early enough so that approximately twenty-one hogs could be sold (Table VI). However, farrowing was not accomplished as planned and resulted in the sale of only eleven hogs. The sale of these hogs plus one cow totalled \$712 in cash receipts. Including one sow purchased for \$57 and eighteen heifers raised in 1958, livestock inventories on December 31, 1958, consisted of four sows, one bear, twenty-six other hogs, thirty-five heifers, and two head of workstock with a total value of about \$3,518. All livestock were owned jointly by the tenant and landlord except the two head of workstock and ten of the heifers with a total value of approximately \$450, all of which were owned by the tenant.

Capital investments. Capital investments totalled \$3,529 in 1958 compared with an estimated \$1,853, or there were \$1,676 more invested than estimated (Table VII). It was anticipated that some milk quota should be made during the fall of 1957. However, since only eight pounds of quota were made at this time, it was decided to purchase 300 pounds of quota at a cost of \$1,200 in February, 1958. By December 31, 1958, the difference in the price of quota and non-quota milk returned the original \$1,200 plus an additional \$252. No estimate was made for investments including land clearing, dairy barn improvements, and improvements in a loafing barn, implement shed, and bull pens, however, these actual expenditures totalled \$401. Improvements made on a dwelling

were \$37 higher than estimated. On the other hand, machinery and equipment investments were \$110 less than estimated, and the investment in a silo was \$15 less than estimated.

Income and expenses. Total cash income plus inventory increases totalled \$14,524 in 1958 compared with an estimated \$12,197, or this income was \$2,327 more than estimated (Figure 1). This increase in income was brought about by having \$2,751 more feed and livestock in inventory while cash income was \$424 less than estimated. This increase in inventories was brought about because of several reasons. First, plans were made to feed all of the oats produced, however, 400 bushels were on hand and valued at \$260. Second, a reduction in swine production resulted in an increase of \$275 in the value of corn on hand. Third, an increase in the number and value of heifers raised resulted in an increase of \$2,130 in the value of heifers on hand. Fourth, more swine were on hand December 31, 1958 than had been anticipated with an increase in value of \$226. Fifth, it was anticipated that all straw would be used before the end of the year, however, eight tons were on hand with a total value of \$80. On the other hand, the value of hay and silage on hand was \$220 less than estimated since more was fed than anticipated. Cash income was less than estimated because of three reasons. First, cash income from crops was nine dollars less than estimated because of a lower selling price for cotton than anticipated. Second, livestock receipts were \$315 less than expected because of a decrease in milk production. Third, income from custom work and forestry work was \$108 less than estimated.

Total cash and non-cash expenses were \$9,461 compared with an estimated \$7,565, or these expenses were \$1,896 more than anticipated. Total cash operating costs were \$1,515 more than estimated because of three reasons. First, increased corn, corn silage, and pasture acreage resulted in higher expenses for fertilizer, seed, and similar items. Second, more feeds were fed than anticipated, resulting in the purchase of additional feeds. Third, no estimates were made for various expense items including dairy herd improvement association costs and road and building repair costs because they were not anticipated or they were difficult to estimate. Fertilizer, seed, labor, milk hauling and equipment rental were the major items of cash cost, representing \$5,499 or approximately 64 per cent of the total cash operating costs. Non-cash costs were \$381 more than estimated because capital investments were about two times the amount estimated, resulting in increased depreciation costs.

Net cash income was \$2,771 compared with an estimated \$4,710, or net income was \$1,929 less than estimated.

Net farm income was estimated to be \$4,182 whereas the actual income was \$4,613 or \$431 more than estimated. This increase in net farm income was brought about by having \$2,751 more feed and livestock in inventory, \$424 less total cash income, and \$1,896 more total costs than estimated. (See Table XXXII in Appendix A for detailed estimated and actual income and expense statement.)

Farm II

Tenure

This farm is operated under a verbal share-lease arrangement in

which the tenant furnishes all of the machinery and equipment, fuel, and labor, and pays two-thirds of the remaining operating costs (Table III). The landlord pays the remaining one-third of the operating costs. All income is divided on a one-third landlord and two-thirds tenant basis except for income derived from cattle, custom work, and forestry work, all of which goes to the tenant.

Labor

All of the labor required for the farming operation in 1957 and 1958 was supplied by the tenant and his family with a labor force equal to approximately 3.2 man equivalents.

Operations on Farm II in 1957

Crops. Total corn production amounted to 990 bushels or 190 bushels more than estimated, because ten more acres were produced than planned (Table IX). Cotton produced on thirty acres amounted to approximately 22,243 pounds of lint which was about 7,200 pounds more than estimated. Soybeans were planted on twelve acres in 1957, however, none was harvested because of unfavorable weather at harvest time.

Livestock. A total of four sows was purchased in 1957 for \$285, and two cull sows and three veal calves were sold for a total of \$330. No market hogs were sold because the sows did not farrow early enough for this to be accomplished. Livestock on hand December 31, 1957, consisted of four sows and twenty-five other hogs with a total value of \$894. In addition, there were five milk cows owned by the tenant with a value of \$500.

TABLE IX

A COMPARISON OF THE ACTUAL ACREAGE AND YIELD OF CROPS
PRODUCED ON FARM XI, AMES PLANTATION, 1957 AND
1958

Crops	1957				1958			
	Acres		Yield Per Acre		Acres		Yield Per Acre	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn	20	30	40 bu.	33 bu.	30	60	40	50
Cotton	30	30	500 #	740 #	30	40	625 #	805 #
Cottonseed	30	30	770 #	1262 #	30	40	962 #	1161 #
Soybeans	15	12	20 bu.	--	--	--	--	--
Strawberries	--	--	--	--	3	3	--	--
Lespedeza								
Cattle Pasture	--	--	--	--	12	12	Graze	Graze
Hog Pasture (clover)	--	--	--	--	3	2	Graze	Graze

Capital investment. In order to indicate the investment required to carry out a farming operation on farms similar to this one, the equipment rented is treated as an investment and the rental cost is treated as depreciation on this investment. This investment totalled \$5,000 in 1957. In addition, to \$285 invested in swine breeding stock, capital investments totalled \$5,682 compared with an estimated \$4,974 (Table X). This increase in investments was reflected in an increased investment in machinery and equipment.

Income and expenses. Total cash income plus inventory increases totalled \$10,649 in 1957 compared with an estimated \$7,498, or total income was \$3,151 more than estimated (Figure 2). Cash receipts were \$2,826 higher than estimated which was due primarily to an increase in cotton production, the sale of two sows which was not included in the plans, and receipts from custom work even though none was anticipated. Feed and livestock inventories increased \$324 more than estimated because of an increase in the value of swine on hand (Table XI).

Total cash and non-cash costs were \$3,471 compared with an estimated \$3,313. Most of this increase in costs was increased non-cash costs brought about by investing \$700 more than estimated in machinery and equipment, resulting in increased depreciation costs. The major items of cash cost were fertilizer, ginning, and fuel, representing a total cost of \$1,954.

Net cash income was \$6,336 which was \$2,773 more than estimated.

Net farm income totalled \$7,177, whereas, this income was estimated to be \$4,185. This increase in net farm income was brought about by having \$2,826 more cash income and \$324 more feed and livestock in

TABLE X

A COMPARISON OF THE LANDLORDS' AND TENANTS' ESTIMATED AND ACTUAL COST OF CAPITAL INVESTMENTS ON FARM NUMBER II, AMES PLANTATION, 1957 AND 1958

	1957 Cost		1958 Cost		Total '57&'58		1957 Depr.		1958 Depr.		Total Depr.	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
(Landlord)												
Fencing	\$ 164	\$ 157	\$ 153	\$162	\$ 317	\$ 319	\$ 12	\$ 8	\$ 11	\$ 24	\$ 23	\$ 32
Wells	-	-	950	383	950	383	-	-	71	29	71	29
Buildings:												
Crib & hog pens	200	125	-	-	200	125	30	4	-	25	30	29
Well house	-	-	-	115	-	115	-	-	-	8	-	8
Farrowing houses	-	-	100	91	100	91	-	-	15	16	15	16
Total landlord	364	282	1,203	751	1,567	1,033	42	12	97	102	139	114
(Tenant)												
Machinery & Equip.	4,610	5,400	-	181	4,610	5,400	346	540	540	553	880	1,093
Grand Total	4,974	5,682	1,203	932	6,177	6,433	388	552	637	655	1,019	1,207

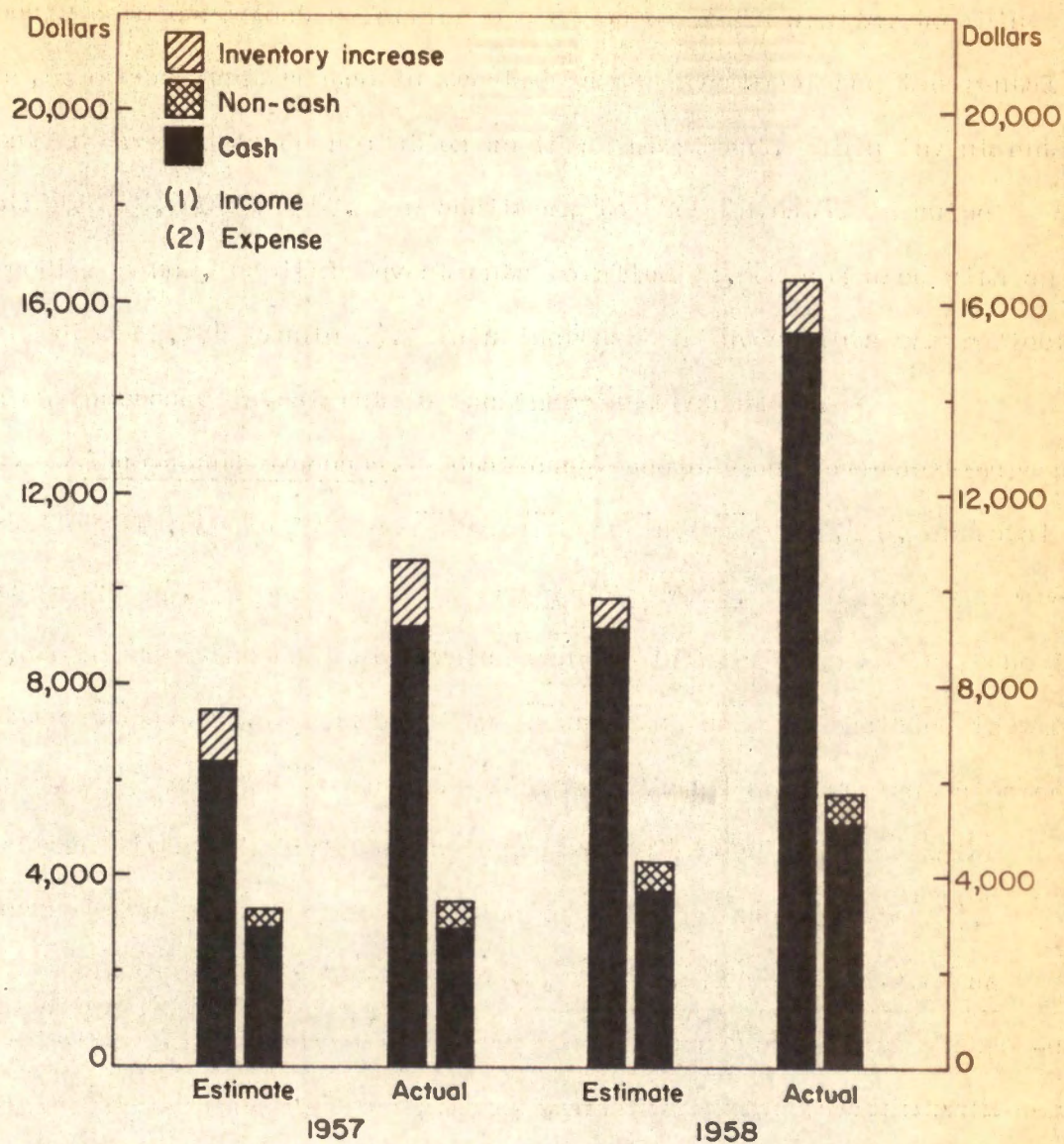


Figure 2. A comparison of the estimated and actual increase and expenses on Farm II, Ames Plantation, 1957 and 1958.

TABLE II

A COMPARISON OF THE ESTIMATED AND ACTUAL VALUE OF FEED AND LIVESTOCK IN INVENTORY
ON FARM NUMBER 11, AMES PLANTATION, DECEMBER 31, 1957 AND 1958

	Landlord				Tenant				Total			
	1957		1958		1957		1958		1957		1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Swine	\$193	\$298	\$318	\$259	\$ 387	\$ 596	\$ 437	\$ 519	\$ 580	\$ 894	\$ 655	\$ 778
Milk Cows	---	---	---	---	400	500	500	504	400	500	500	504
Heifers	---	---	---	---	60	---	---	---	60	---	---	---
Corn	180	208	500	600	360	417	1,000	1,200	540	625	1,500	1,800
Total	373	506	718	859	1,207	1,513	1,937	2,223	1,580	2,019	2,655	3,082

On hand January 1, 1957, 5 cows valued at \$500 and 100 bu. of corn valued at \$125, all belonging to the tenant.

inventory, while total expenses were \$158 more than estimated. (See Table XXXIII in Appendix A for detailed estimated and actual income and expense statement.)

Operations on Farm II in 1958

Crops. Since more land was cleared before planting time than was anticipated and it was also felt that the tenant could grow more corn than originally planned, an additional thirty acres were added to the 1958 crop. Because of the increased acreage and increase in yield of ten bushels per acre, total corn production amounted to 3,000 bushels or 1,800 bushels more than estimated. Cotton acreage was also increased by ten acres because of an increase in allotment. An increase in yield of 180 pounds of lint per acre coupled with an increased acreage resulted in a total yield of 32,213 pounds or 13,460 pounds more than estimated (Table IX).

Livestock. Livestock sales in 1958 consisted of thirty-seven hogs, including four sows, and three veal calves for a total of \$2,172. It was thought that about fifty-three hogs could be sold since four sows and twenty-four other hogs were estimated to be on hand January 1, 1958. However, the pig crop was not as large as anticipated which reduced the number of market hogs produced. Livestock owned jointly by the tenant and landlord which was on hand December 31, 1958, consisted of thirty-seven hogs, including four sows, with a total value of \$779. Also, the tenant owned five milk cows valued at \$100 each or a total of \$500.

Capital investments. Capital investments totalled \$932 in 1958 or these investments were \$271 less than estimated (Table X). The cost of investments was less than anticipated because of a lower cost for digging a well than was expected.

Income and expenses. Gross income was \$16,523 compared with an estimated \$9,834. Total cash income was \$6,262 more than estimated while the value of feed and livestock in inventory increased \$427 more than anticipated (Figure 2). Gross receipts were approximately \$6,158 higher than estimated because of an increase in the yield and selling price for cotton and the sale of corn brought about by increased corn production. On the other hand, receipts from forestry work and custom work were approximately \$259 less than estimated. The increase in value of feed and livestock on hand was brought about by an increase in corn inventories.

Gross expenses for 1958 totalled \$5,756 compared with an estimated \$4,315. This increase in costs came about for several reasons. First, increased corn and cotton acreage resulted in higher crop costs. Second, after the plans were made it was decided to sell the sows on hand and purchase younger breeding stock. Third, road and building repair costs incurred were not anticipated. The major items of cash cost were fertilizer, seed and plants, poison, fuel, and road and building repairs, representing a combined total cost of \$3,891 or more than one-half of the total cash operating costs.

Net cash income was \$10,767 compared with an estimated \$5,519

or this income was \$5,248 more than estimated. This increase in net farm income was brought about by having \$6,262 more cash income and \$427 more feed and livestock in inventory, while total costs were \$1,441 higher than estimated. (See Table XXXIV in Appendix A for detailed estimated and actual income and expense statement.)

Farm III

Tenure

With the exception of machinery and equipment, fuel, and labor, all of which are furnished by the tenant, all expenses and income are divided on a one-fourth landlord and three-fourths tenant basis for corn and hogs and a one-third landlord and two-thirds tenant basis for cotton (Table III). All income from cattle, forestry work, and custom work goes to the tenant.

Labor

A work force of approximately 1.4 man equivalents composed of the tenant and his family is available for use on this farm. Additional labor was hired by the tenant for picking cotton in 1957 at a cost of \$125. No labor was hired by the tenant or the landlord in 1958.

Operations on Farm III in 1957

Crops. Crops produced in 1957 consisted of cotton, corn, lespedeza for hay, and ladino clover for pasture. Although only two acres less corn were planted than planned, total corn production was 520 bushels less than estimated. This decrease in corn production is explained by the fact that the productive potential of the soils on which the corn was

produced was over-estimated, as soil tests were not made until after the corn had been planted. Cotton produced on thirteen acres yielded a total of 11,200 pounds or 1,520 pounds more than estimated (Table XII). This increase in cotton yield was brought about because of better moisture conditions than anticipated and the tenant possessing greater skill in growing cotton than believed possible.

The tenant was given the option of seeding four acres of oats and 16.5 acres of ryegrass for pasture. Because of a shortage of funds, the tenant decided he could not afford to seed these crops and they were left out of the 1957 operations.

Livestock. Livestock sales in 1957 consisted of nineteen hogs and three veal calves for a total cash income of \$1,219 compared with the estimated sale of twenty-one hogs and two veal calves for \$795. This increase in cash income was the result of a higher market price for hogs than anticipated. Livestock purchases consisted of three sows purchased in the fall of 1956 for a total of \$170. Two heifers were not purchased as planned since the tenant decided not to seed additional pasture. A total of sixteen pigs, four sows, four milk cows, and four head of workstock were on hand December 31, 1957, with a total value of \$1,211. The milk cows and workstock valued at \$800 were owned by the tenant.

Capital investments. In addition to \$170 invested in swine breeding stock, capital investments totalled \$1,189 in 1957 or \$603 more than estimated (Table XIII). This increase in investments was the result of investing \$240 in land clearing even though none was anticipated and investing \$500 more in machinery and equipment than estimated, while investments made in fencing were \$137 less than estimated.

TABLE XII

A COMPARISON OF THE ESTIMATED AND ACTUAL ACREAGE AND YIELD PER
ACRE OF CROPS PRODUCED ON FARM III, AMES PLANTATION,
1957 AND 1958

Crops	1957				1958			
	Acres		Yield/Acre		Acres		Yield Per Acre	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn	22	20	60 bu.	40 bu.	25	33	42 bu.	51 bu.
Cotton	13	13	750#	867#	15	15	625#	989#
Cottonseed	13	13	770#	1476#	15	15	962#	1380#
Hay (leesp.)	5	2.5	1.5 T.	2 T.	5	6	1.5 T.	1 T.
Oat Pasture	4	-	Graze	--	-	-	--	--
Clover Pasture	2	2	Graze	Graze	4	4	Graze	Graze
Ryegrass	16.5	-	Graze	--	-	-	--	--
Lespedeza Pasture	-	-	--	--	-	32	Graze	Graze

TABLE XIII

A COMPARISON OF THE ESTIMATED AND ACTUAL COST OF CAPITAL INVESTMENTS MADE ON
FARM NUMBER III, AMES PLANTATION, 1957 AND 1958

Kind of Investment	1957 Costs		1958 Costs		Total 1957 & 1958		1957		1958		Total Depr. 1957 & 1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
(Landlord)												
Land Improvement	\$ -	\$ 240	\$ -	\$ 60	\$ -	\$ 300	\$ -	\$ 36	\$ -	\$ -	\$ -	\$ 36
Fencing	286	149	253	251	539	400	21	5	24	17	45	22
Well	-	-	900	735	900	735	-	-	75	55	135	55
Buildings:												
Hog Houses	-	-	50	78	50	78	-	-	8	15	8	15
Dwelling	-	-	-	151	-	151	-	-	-	-	-	-
Well House	-	-	-	148	-	148	-	-	-	9	-	9
Total Landlord	286	389	1,203	1,423	1,489	1,812	21	41	107	96	188	137
(Tenant)												
Machinery & Equip.	300	800	350	-	650	800	23	80	106	80	129	160
Grand Total	586	1,189	1,553	1,423	2,139	2,612	44	121	213	176	317	297

Income and expenses. Gross income or total cash income plus increases in feed and livestock in inventory amounted to \$6,108 compared with an estimated \$5,283, or gross income was \$825 more than estimated (Figure 3). Cash income from crops was \$691 more than estimated because of an increase in the yield and selling price of cotton. Livestock receipts increased \$424 for two reasons. First, hogs were sold at a higher market price than anticipated. Second, one more calf was sold than expected with a higher price obtained than estimated. On the other hand, the value of feed and livestock on hand December 31, 1957, was \$290 less than estimated (Table XIV). The value of livestock on hand was \$197 less than estimated because fewer hogs were on hand than anticipated, and no heifers were purchased as planned because of the tenants' decision not to seed additional pasture. The value of feed in inventory decreased \$93 because of a reduction in the amount of corn on hand brought about by decreased corn production.

Gross expenses or cash and non-cash expenses were \$2,125 or \$28 less than estimated. Cash operating costs were \$105 less than estimated, while non-cash costs were \$77 more than estimated. Cash operating costs were less than estimated because of a reduction in corn and pasture acreage which resulted in decreased production costs. The major items of cash cost were fertilizer and ginning with a combined total cost of \$717. Non-cash costs were higher than estimated because of \$240 invested in land clearing which was not anticipated and the investment of \$500 more in machinery and equipment than anticipated, resulting in higher depreciation costs.

Net cash income was \$3,281 compared with an estimated \$2,061.

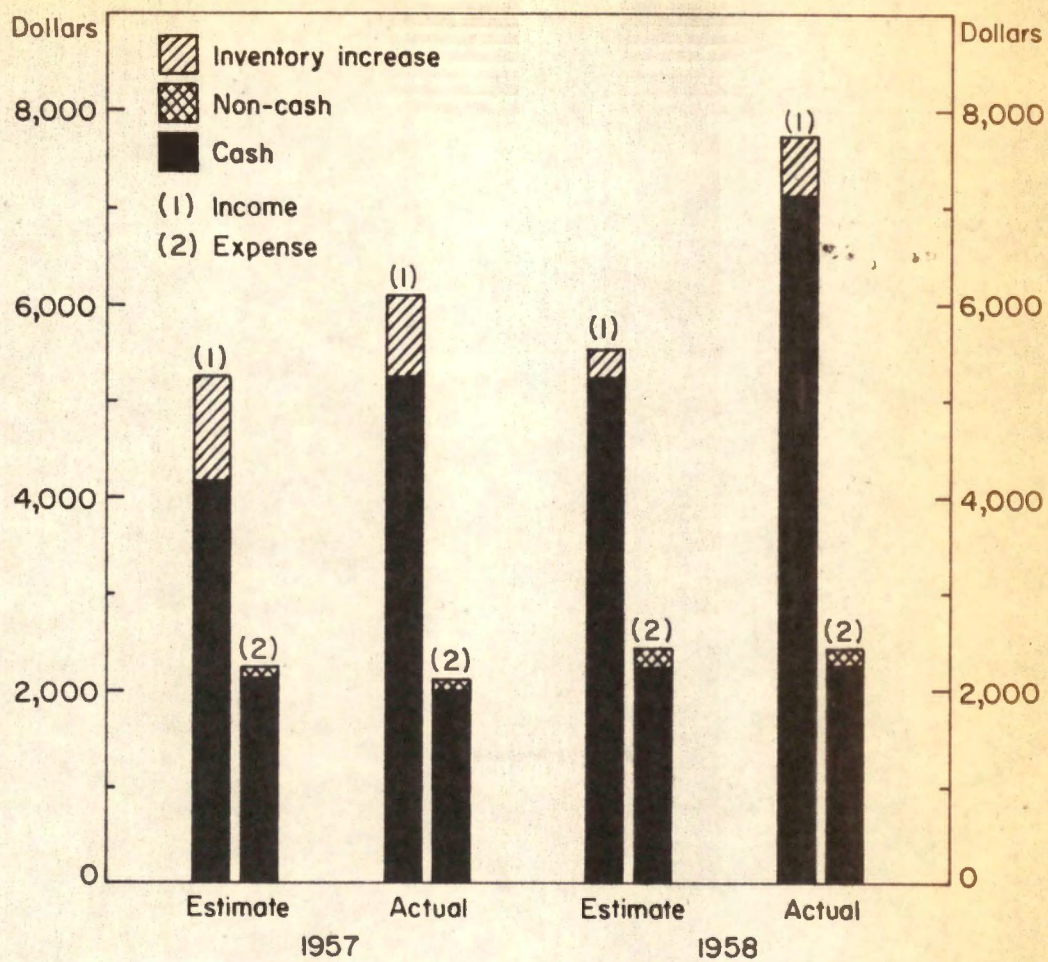


Figure 3. A comparison of the estimated and actual income and expenses on Farm III, Ames Plantation, 1957 and 1958.

TABLE XIV

A COMPARISON OF THE ESTIMATED AND ACTUAL VALUE OF FEED AND LIVESTOCK IN INVENTORY
ON FARM NUMBER III, AMES PLANTATION, DECEMBER 31, 1957 AND 1958

	Landlord				Tenant				Total			
	1957		1958		1957		1958		1957		1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Swine	\$122	\$103	\$114	\$114	\$ 366	\$ 308	\$ 350	\$ 342	\$ 488	\$ 411	\$ 464	\$ 456
Corn	223	203	261	400	668	609	783	1,200	891 $\frac{1}{2}$	812 $\frac{2}{3}$	1,044	1,600
Heifers	-	-	-	-	120	-	-	-	120	-	-	-
Milk Cows	-	-	-	-	400	400	400	400	400	400	400	400
Workstock	-	-	-	-	400	400	400	200	400	400 $\frac{2}{3}$	400	200 $\frac{2}{3}$
Total	345	306	375	514	1,954	1,717	1,933	2,142	2,299	2,023	2,308	2,656

$\frac{1}{2}$ Estimated 285 bushels of corn on hand January 1, 1957 valued at \$386, plantation share 94, tenants share 292.

$\frac{2}{3}$ 320 bushels of corn on hand January 1, 1957 valued at \$400 all belonging to tenant.

$\frac{2}{3}$ All milk cows and workstock on hand January 1, 1957.

Net farm income totalled \$3,983 or \$853 more than estimated. This increase in net farm income was brought about by having \$1,115 more cash income, \$28 less total costs, and a decrease in the value of inventories on hand amounting to \$290. (See Table XXXV in Appendix A for detailed estimated and actual income and expense statement.)

Operations on Farm III in 1958

Crops. Crops produced in 1958 consisted of cotton, corn, lespedeza for hay and pasture, and ladino clover for swine pasture (Table XII). Total corn production was 1,680 bushels or approximately 630 bushels more than estimated. This increase in corn yield was brought about by an increase of eight acres in corn acreage and an average increase in yield of nine bushels per acre. Cotton production amounted to 14,830 pounds which was 5,455 pounds more than estimated. An excellent stand of cotton was obtained which accounts for much of the increase in yield over the estimated. In addition, more rainfall than expected and the residual affect of a higher fertilization rate applied in 1957 had some effect upon the increased yield.

Livestock. In an effort to increase swine production, four sows were purchased in 1958 for \$152. However, the pig crop was smaller than expected and resulted in the sale of only twenty-five hogs out of an estimated forty-one for a total of \$1,208. In addition, three veal calves were sold for approximately \$100. Livestock on hand December 31, 1958, consisted of five sows, seventeen other hogs, four milk cows, and two workstock for a total value of \$1,056. The milk cows and workstock with a value of \$600 were owned by the tenant.

Capital investments. Aside from the \$152 invested in swine breeding stock, a total of \$1,423 was invested in capital improvements compared with an estimated \$1,553, or capital investments totalled \$130 less than estimated (Table XIII). The major portion of this decrease in investments was brought about by not investing any of the \$350 estimated for machinery and equipment while investments in buildings totalled \$227 more than estimated.

Income and expenses. Gross income in 1958 was \$7,758 compared with an estimated \$5,543, or this income was \$2,215 more than estimated (Figure 3). Cash receipts were \$1,867 more and inventories were \$348 more than estimated. Crop receipts were \$2,211 higher than estimated, while livestock receipts were \$135 less, and forestry work and custom work receipts were \$209 less than estimated. An increase in the yield and selling price for cotton accounts for most of the increase in crop receipts. Decreased swine production with a decrease in swine sales brought about the decrease in livestock receipts. Less forestry work was performed by the tenant than anticipated, and no income was realized from custom work even though \$100 cash income was estimated from this source. The increase in the value of inventories on hand was reflected in the increase in the amount of corn on hand brought about by increased corn production (Table XIV).

Gross expenses were \$2,450 or nine dollars less than estimated. Non-cash costs were \$37 less than estimated, while cash costs were \$28 more than estimated. Fertilizer, ginning, and fuel were the major items of cash cost, representing a total cost of \$1,271.

Net cash income was \$4,851 compared with an estimated \$3,012.

The actual net farm income was \$5,308 while this income was estimated to be \$3,084, or net farm income was \$2,224 more than estimated. This increase in net farm income was brought about by having \$1,867 more cash income, \$348 more feed and livestock in inventory, and nine dollars less total costs than estimated. (See Table XXXVI in Appendix A for detailed estimated and actual income and expense statement.)

Farm IV

Tenure

In the share-lease arrangement on this farm the tenant furnishes all labor, machinery and equipment, and fuel, and pays three-fourths of the remaining operating costs. The landlord's share of expenses consists of these remaining operating expenses (Table III). All income is divided one-fourth for the landlord and three-fourths for the tenant except for income derived from cattle, forestry work, and custom work, all of which goes to the tenant.

Labor

With the exception of labor hired for chopping and picking cotton, all labor required on this farm in 1957 and 1958 was furnished by the tenant and his family with a labor force of approximately 1.7 man equivalents.

Operations on Farm IV in 1957

Crops. Crops produced in 1957 consisted of cotton, corn, lespedeza for hay and seed, and ladino clover for swine pasture (Table IV).

TABLE XV

A COMPARISON OF THE ESTIMATED AND ACTUAL ACREAGE AND YIELD
PER ACRE OF CROPS PRODUCED ON FARM IV, AMES PLANTATION
1957 AND 1958

Crops	1957				1958			
	Acres		Yield/Acre		Acres		Yield/Acre	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn	22	15	60 bu.	20 bu.	25	24	40 bu.	32 bu.
Cotton	16.5	16.5	624#	556#	16.5	16.5	625#	625#
Cottonseed	16.5	16.5	957#	947#	16.5	16.5	962#	984#
Lespedeza (hay)	4.5	4.5	1.5T	1.5T	4.5	4.5	1.5T	1T
Lespedeza (seed)	10.5	-	-	-	-	-	-	-
Oats (swine pasture)	2.5	2	Graze	Graze	-	-	-	-
Ladino Clover (swine pasture)	2.5	2	Graze	Graze	4	4	Graze	Graze
Bermuda grass	14	-	Graze	-	14	14	Graze	Graze
Waterways - Lesp.	5	-	-	-	3.5	3.5	-	-
Fescue and clover	5	-	-	-	-	-	-	-
Garden & Truck Crops	4	3	-	-	-	1	-	-

Total corn production amounted to 300 bushels which was 1,020 bushels less than estimated. Since the tenant on this farm was about sixty-five years of age, it was decided that the planned corn acreage was more than he could handle, and the corn acreage was reduced from twenty-two to fifteen acres. In addition, without the benefit of information contained in soil tests when the plans were made, the productive potential of the soils on which the corn was produced was over estimated. Total cotton production on 16.5 acres was 9,175 or 1,125 pounds less than estimated. A considerable amount of this reduced cotton yield was likely due to physical limitations on the part of the tenant. About 10.5 acres of lespedeza were produced for seed; however, no seed was harvested because of the poor crop that was made. Approximately fourteen acres of bermuda grass, five acres of lespedeza, and five acres of fescue and ladino clover were not seeded as planned because land clearing did not progress as anticipated.

Livestock. Six sows were purchased in 1957 at a cost of \$315. Livestock sales consisted of seven hogs, including two cull sows, and one calf for a total of \$413. It was estimated that fourteen hogs would be sold; however, hog sales were reduced because of a small pig crop. Livestock on hand December 31, 1957, consisted of four sows, twenty-one pigs, and two milk cows for a total value of \$826. The two milk cows were owned by the tenant with an estimated value of \$100 each.

Capital investments. In addition to \$315 invested in swine breeding stock, a total of \$3,574 was invested in capital improvements in 1957 or \$819 more than estimated (Table XVI). Even though no estimate was made for investments in land clearing, \$875 was invested in this

TABLE XVI

A COMPARISON OF THE ESTIMATED AND ACTUAL COST OF CAPITAL INVESTMENTS MADE ON
FARM NUMBER IV, AMES PLANTATION, 1957 AND 1958

Kind of Investment	1957 Costs		1958 Costs		Total Costs 1957 & 1958		1957 Depr.		1958 Depr.		Total Depr. 1957 & 1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
(Landlord)												
Land Improvement	\$ -	\$ 875	\$ -	\$ -	\$ -	\$ 875	\$ -	\$ 131	\$ -	\$ -	\$ -	\$ 131
Fencing	155	99	64	77	219	176	12	3	8	11	20	14
Parrowing Houses	-	-	100	-	100	-	-	-	15	-	15	-
Total Landlord	155	974	164	77	319	1,051	12	134	23	11	35	145
(Tenant)												
Machinery & Equip.	2,600	2,600	-	-	2,600	2,600	195	260	260	260	455	520
Grand Total	2,755	3,574	164	77	2,919	3,651	207	394	283	271	490	665

improvement. On the other hand, investments made in fencing were \$56 less than estimated.

Income and expenses. Gross income amounted to \$4,476 compared with an estimated \$5,543, or gross income was \$1,067 less than estimated (Figure 4). Total cash income was \$811 less than estimated, and the increase in inventories was \$256 less than estimated. Crop receipts were \$513 less, livestock receipts \$92 lower, and custom work and forestry work receipts were \$206 less than estimated. The decrease in crop receipts was the result of decreased cotton yields and no lespedeza seed sold as planned. Reduced livestock receipts was the result of a reduction in hog production and sales. The decrease in the value of inventories was brought about because less corn on hand than estimated, reflecting the decreased corn yield obtained in 1958 (Table XVII).

Gross expenses totalled \$2,222 compared with an estimated \$2,432, or gross expenses were \$210 less than estimated. Total cash operating costs were \$397 less than estimated which was due primarily to reduced corn and pasture acreage. The major items of cash cost were fertilizer, ginning, and labor, representing a total of \$843 or approximately forty-six per cent of the total cash operating costs. Non-cash costs were \$187 higher than estimated because of depreciation costs on \$875 invested in land clearing not included in the plans.

Net cash income was \$1,834 which was \$415 less than estimated.

Net farm income amounted to \$2,254 which was \$857 less than estimated. This decrease in net farm income was brought about by having \$811 less cash income, \$256 less feed and livestock in inventory, and \$210

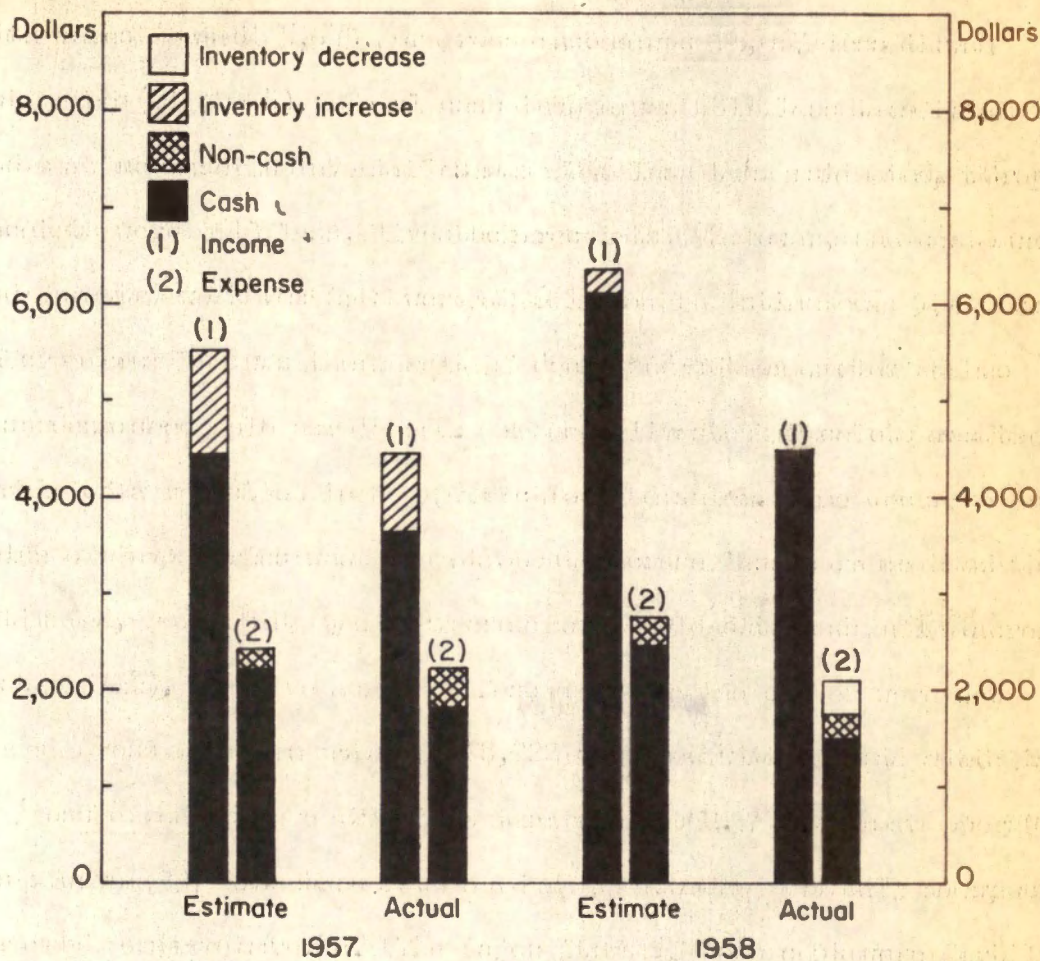


Figure 4. A comparison of the estimated and actual income and expenses on Farm IV, Ames Plantation, 1957 and 1958.

TABLE XVII

A COMPARISON OF THE ESTIMATED AND ACTUAL VALUE OF FEED AND LIVESTOCK INVENTORY
ON FARM NUMBER IV, AMES PLANTATION, DECEMBER 31, 1957 AND 1958

	Landlord			Tenant			Total												
	1957		1958	1957		1958	1957		1958										
	Est.	Act.	Est. Act.	Est.	Act.	Est. Act.	Est.	Act.	Est. Act.										
Swine	\$163	\$156	\$172	\$104	\$	487	\$	470	\$	513	\$314	\$	650	✓	\$	626	\$	685	\$418
Milk Cows	-	-	-	-	-	250	-	250	-	200	100	-	250	✓	-	250	2/	200	100
Hay	-	-	-	-	-	60	-	-	-	-	-	-	60	✓	-	-	-	-	-
Corn	227	94	156	100	683	281	469	300	910	375	✓	625	400						
Total	390	250	328	204	1,480	1,001	1,182	714	1,870	1,251	1,510	918							

✓ 293 bushels of corn valued at \$530, 2 cows valued at \$250, and 1 ton of hay valued at \$20 estimated to be on hand January 1, 1957 all belonging to the tenant.

2/ On hand January 1, 1957 (cows).

✓ 150 bushels corn on hand January 1, 1957 valued at 187, all belonging to tenant.

less total costs than estimated. (See Table XXXVII in Appendix A for detailed estimated and actual income and expense statement.)

Operations on Farm IV in 1958

Crops. Crops produced in 1958 consisted of cotton, corn, ladino clover, and oats for swine pasture, and bermuda grass for cattle pasture (Table XV). Total corn production on twenty-four acres, including two acres hogged off, was approximately 770 bushels which was about 370 bushels less than estimated. A reduction in corn acreage of three acres and an average yield of eight bushels per acre less than estimated accounts for much of the decrease in total production. A total of 10,312 pounds of cotton was harvested in 1958 for an average of 625 pounds per acre.

Livestock. With the hogs expected to be on hand January 1, 1958, and six sows planned for pig production, it was estimated that sixty-four hogs would be sold. However, these plans were changed and only three sows were maintained for pig production and only thirty-one hogs were sold. This decrease in swine production came as a result of the low yield of corn made in 1957 which prevented the production of hogs at the level planned. Included in the swine sold was two cull sows. One sow was purchased at a cost of \$50. Livestock on hand December 31, 1958, consisted of three sows, nineteen other hogs, and one milk cow for a total value of \$522. The milk cow, with an estimated value of \$100, was owned by the tenant with the remainder of the livestock owned jointly by the tenant and landlord.

Capital investments. In addition to the \$50 invested in swine breeding stock, capital investments totalled \$77 in 1958 compared with an estimated \$164 (Table XVI). All of the \$77 was invested in fencing which was \$13 more than estimated for this investment. Because of the reduction in the number of sows maintained for pig production, farrowing houses, estimated to cost \$100, were not constructed as planned.

Income and expenses. Gross income totalled \$4,178 compared with an estimated \$6,380, or gross income was \$2,202 less than estimated. Total cash receipts were \$1,610 less than estimated, and the value of feed and livestock inventories decreased \$333 compared with an estimated increase of \$259, or the value of feed and livestock inventories on hand was \$592 less than estimated. Livestock receipts were \$1,287 less than estimated mainly because of reduced swine production. No income was realized from custom work and forestry work even though \$425 was estimated from these sources. The decrease in inventories was brought about by decreases in swine and corn inventories (Table XVII). On the other hand, crop receipts were \$102 higher than estimated because of a higher market price for lint cotton than anticipated.

Gross expenses totalled \$1,772 in 1958 compared with an estimated \$2,772, or these expenses were \$1,000 less than estimated. Cash costs were \$988 lower and non-cash costs were \$12 less than estimated. The decrease in cash costs was primarily the result of reduced corn acreage and hog production. The major items of cash cost were fertilizer, labor, and ginning, representing a combined total of \$890. The decrease in non-cash costs resulted from not making an investment in farrowing houses as originally planned, as depreciation costs were reduced when this investment was not made.

Net cash income was \$3,010 which was \$632 less than anticipated.

Net farm income totalled \$2,406 compared with an estimated \$3,608, or this income was \$1,202 less than estimated. This decrease in net income resulted from having \$1,610 less cash income, \$592 less feed and livestock in inventory, while total expenses were \$1,000 less than estimated. (See Table XXXVIII in Appendix A for detailed estimated and actual income and expense statement.)

Farm V

Tenure

In addition to furnishing all of the labor, machinery and equipment, and fuel, the tenant pays two-thirds of the remaining operating costs, and the landlord pays one-third of these remaining operating costs. All income is divided on a one-third landlord and two-thirds tenant basis except for income from cattle, forestry work, and custom work, all of which goes to the tenant (Table III).

Labor

The available labor on this farm consists of the tenant and his family with a labor force equal to approximately 2.3 man equivalents. Additional labor was hired by the tenant to perform miscellaneous work in 1957 at a cost of \$425. Although no labor was hired in 1958, a cotton picker leased by the Ames Plantation was used for picking cotton at a cost of \$5 per hundred weight of lint, or a total cost of approximately \$547.

Operations on Farm V in 1957

Crops. Crops produced in 1957 consisted of cotton, corn, millet, fescue, and ladino clover (Table XVIII). Corn acreage was fifteen acres more than planned in 1957 because more land was cleared before planting time than anticipated. Total corn production amounted to 1,685 bushels more than estimated because of the increased acreage and an average yield of thirty-one bushels per acre more than estimated. This increase in corn yield per acre was brought about primarily because of more rainfall than expected and the tenant possessing a greater skill than expected in growing corn. Total cotton produced on twenty acres amounted to 12,745 pounds of lint compared with an estimated production of 10,000 pounds. It was recognized that a considerable amount of labor would be needed to get this farm into operation. It was felt that 500 pounds of lint cotton per acre would be the most probable under these conditions. However, as indicated above, a considerable amount of labor was hired for various jobs which enabled the tenant to devote more time to the cotton crop than he would have otherwise, resulting in higher yields than estimated. It should also be kept in mind that there was ample rainfall which also contributed to increased production.

A total of eighteen acres of soybeans were planted in 1957, however, none was harvested because of unfavorable weather at harvest time. In addition, five acres of lespedeza and two acres of bermuda grass were not seeded as planned because the land on which these crops were to be placed was not cleared as anticipated.

TABLE XVIII

A COMPARISON OF THE ESTIMATED AND ACTUAL ACREAGE AND YIELD
PER ACRE ON FARM V, AMES PLANTATION, 1957 AND 1958

Crops	1957				1958			
	Acres		Yield/Acre		Acres		Yield Per Acre	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Corn	20	35	40 bu.	71 bu.	35	65	45 bu.	55 bu.
Cotton	20	20	500#	637#	20	20	625#	617#
Soybeans	20	18	15 bu.	-	20	-	15 bu.	-
Lespedeza	5	-	15 T.	-	20	-	1.5 T.	-
Millet	2	3	Graze	Graze	3	3	Graze	Graze
Ladino Clover	5	4	Graze	Graze	5	4	Graze	Graze
Native Bermuda	2	-	Graze	Graze	-	-	-	-
Fescue & Ladino Waterways	-	5	-	-	12	-	Graze	-

Livestock. A total of twenty-two out of an estimated twenty-four hogs were sold for a total of \$1,150, and five sows were purchased for approximately \$249. Livestock on hand December 31, 1957, consisted of twenty-five pigs, five sows, one boar, and one cow with a total value of \$916. The cow was owned by the tenant and the remainder of the livestock was owned jointly by the tenant and landlord.

Capital investments. In addition to the \$249 invested in swine breeding stock, \$8,967 was invested in capital improvements compared with an estimated \$5,112 or these investments totalled \$3,885 more than estimated (Table XIX). No estimate was made for investments in land clearing and a dwelling totalling \$3,165. Actual machinery and equipment investments were about \$800 more than estimated. However, investments made in fencing and a crib were \$110 less than estimated.

Income and expenses. Gross income was \$8,743 compared with an estimated \$7,168, or this income was \$1,575 more than estimated (Figure 5). Receipts from livestock were \$262 more than estimated, and the value of feed and livestock inventories was \$1,892 more than expected. On the other hand, crop receipts were \$495 less than estimated, and receipts from forestry work and custom work were \$84 less than estimated. Livestock receipts were higher than estimated because hogs were sold at a higher market price than anticipated. An increase in the amount of corn on hand which was brought about because of increased acreage and yield per acre accounts for the increase in inventories (Table XX). Crop receipts were less than estimated because no income was realized from soybean sales as planned.

TABLE XII

A COMPARISON OF THE ESTIMATED AND ACTUAL COST OF CAPITAL INVESTMENTS ON FARM
NUMBER V, AMES PLANTATION, 1957 AND 1958

Kind of Investments	Cash Costs				Total '57 & '58		Depreciation				Total	
	1957		1958		'57 & '58		1957		1958		'57 & '58	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
(Landlord)												
Land Improvement	\$ -	\$1,790	\$ -	\$ -	\$ -	\$1,790	\$ -	\$217	\$ -	\$ -	\$ -	\$ 217
Well	-	-	850	582	850	582	-	-	64	64	64	64
Fencing	212	148	250	169	462	317	16	10	29	23	45	33
Buildings:												
Dwelling	-	1,375	750	1,084	750	2,459	-	34	62	96	62	130
Crib	200	154	-	50	200	204	30	12	11	20	41	32
Hog Houses	-	-	100	137	100	137	-	-	15	14	15	14
Well House	-	-	-	102	-	102	-	-	-	2	-	2
Total Landlord	412	3,467	1,950	2,124	2,362	5,591	46	273	181	199	227	472
(Tenant)												
Machinery & Equip.	4,700	5,500	-	-	4,700	5,500	352	550	550	550	902	1,100
Grand Total	5,112	8,967	1,950	2,124	7,062	11,091	398	823	731	749	1,129	1,572

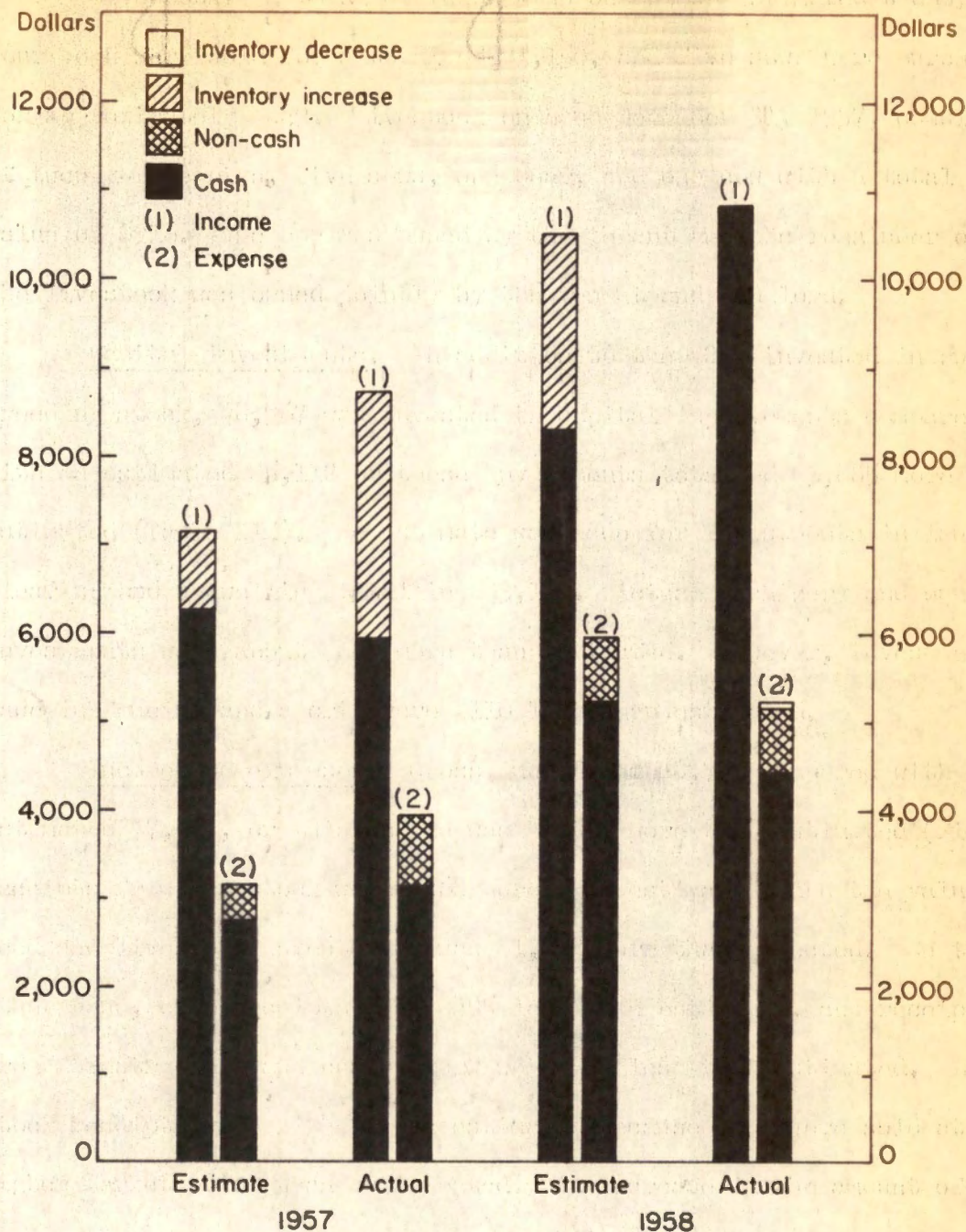


Figure 5. A comparison of the estimated and actual income and expenses on Farm V, Ames Plantation, 1957 and 1958.

TABLE XX

A COMPARISON OF THE ESTIMATED AND ACTUAL VALUE OF FEED AND LIVESTOCK IN INVENTORY
ON FARM NUMBER V, AMES PLANTATION, DECEMBER 31, 1957 AND 1958

	Landlord				Tenant				Total			
	1957		1958		1957		1958		1957		1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Swine	\$193	\$ 272	\$ 271	\$ 309	\$ 387	\$ 544	\$ 544	\$ 617	\$ 580	\$ 816	\$ 815	\$ 926
Milk Cows	-	-	-	-	300	100	100	100	300	1002/	100	1002/
Heifers	-	-	600	-	-	-	1,200	-	-	-	1,800	-
Corn	180	750	892	700	360	1,500	1,783	1,400	540 1/2	2,250 3/4	2,675	2,100
Hay	-	-	-	-	60	-	-	-	60	-	-	-
Total	373	1,022	1,763	1,009	1,107	2,144	3,627	2,117	1,480	3,166	5,390	3,126

1/ 255 bushels of corn estimated to be on hand January 1, 1957, valued at \$29 1/4 all belonging to tenant.

2/ Milk cows on hand January 1.

3/ 226 bushels corn actually on hand January 1, 1957 valued at \$277 all belonging to tenant.

Gross expenses totalled \$3,982 whereas these costs were established to be \$3,159, or gross expenses were \$823 more than estimated. Cash operating costs were \$398 more than estimated primarily because of labor hired for performing miscellaneous work which was not anticipated. The major items of cash cost were fertilizer, ginning, fuel, miscellaneous supplies, and labor totalling \$1,872. Non-cash costs were \$425 higher than expected because of increased investments in machinery and equipment and investments in land clearing and a dwelling which were not anticipated, resulting in higher depreciation costs.

Net cash income was \$2,806 compared with an estimated \$3,521.

Net farm income totalled \$4,761 which was \$752 more than estimated. This increase in net farm income was brought about by having \$1,892 more feed and livestock in inventory, while cash income was \$317 less and total costs \$823 more than estimated. (See Table XXXIX in Appendix A for detailed estimated and actual income and expense statement.)

Operations on Farm V in 1958

Crops. Crops produced in 1958 consisted of cotton, corn, and millet and ladino clover for pasture (Table XVIII). When plans were made for 1958, it was estimated that thirty-five acres of corn would be produced. However, because of the good job the tenant did in growing corn in 1957, it was decided to add thirty acres to the corn crop. As a result of this increased acreage and an average yield of ten bushels per acre more than estimated, total corn production was 2,000 bushels more than estimated.

Included in the plans for 1958 were twenty acres of soybeans, twenty acres of lespedeza, and twelve acres of fescue and ladino clover. Since the 1957 crop of soybeans was lost because of unfavorable weather, it was decided not to seed the soybeans because of the risk involved. The lespedeza and fescue and ladino clover were not seeded because the land on which these crops were to be placed was not cleared early enough for this to be accomplished.

Livestock. A total of seventy-two hogs, including five sows, were sold in 1958 (eleven more than estimated) for a total of \$3,318. A larger pig crop than anticipated accounts for the increase in the number of swine sold. Livestock purchases consisted of six sows for a total cost of \$306. Plans were made to purchase twenty heifers in 1958. However, no heifers were purchased because pastures were not established as planned. There were six sows and thirty-nine other hogs on hand December 31, 1958, with a total value of \$926. In addition, the tenant owned one cow with an estimated value of \$100.

Capital investments. In addition to \$306 invested in swine breeding stock, capital investments totalled \$2,124 in 1958 compared with an estimated \$1,950 (Table XIX). Capital investments were higher than estimated because of an investment made in a crib and increased investments in a dwelling. The crib was needed to store the big corn crop.

Income and expenses. Gross income in 1958 totalled \$10,852 compared with an estimated \$10,533, or this income amounted to \$279 more than estimated (Figure 5). Crop receipts were \$1,214 higher than estimated, and livestock receipts were \$1,305 more than estimated. On the other hand, the value of feed and livestock inventories was \$2,264 less than estimated,

and income from custom work and forestry work was three dollars less than anticipated. Corn sales brought about by the increased corn production accounts for the increase in crop receipts. The increase in livestock receipts resulted from the sale of more hogs with a higher market price than anticipated. The value of feed and livestock inventories was less than estimated because none of the twenty heifers was purchased as planned, and less corn was on hand at the end of the year than expected because of increased swine production and corn sales (Table XX).

Gross expenses amounted to \$5,191 or these expenses were \$785 less than estimated. Cash operating costs were \$803 less than estimated, while non-cash costs were \$18 higher than estimated. Cash costs were less than estimated because none of the heifers were purchased as planned. The major items of cash cost were fertilizer, ginning, labor, supplement, and fuel, with a combined total cost of \$2,492. Non-cash costs were higher than estimated because of increased investments in a dwelling which resulted in higher depreciation costs.

Net cash income amounted to \$6,410 compared with an estimated \$3,064.

Net farm income was \$5,621 which was \$1,064 more than estimated. This increase in net farm income was brought about by having \$2,543 more cash income and \$785 less total costs than estimated, while the value of feed and livestock in inventory was \$2,264 less than estimated. (See Table XL in Appendix A for detailed estimated and actual income and expense statement.)

CHAPTER V

MEASURES OF SUCCESS

In an effort to measure the success of the five farms included in this study, several methods of measurement have been used. Each of the methods used tells one specific thing about the success of these farms. Some idea of the relative success or progress can be obtained by the use of these methods. The methods used were: (1) returns to total investments, (2) returns to additional investments, (3) returns to management and family labor, and (4) net farm income and net returns per acre. There are other measures that could be used, but it is felt that those mentioned above are reliable and will indicate the success of each farming operation.

Returns to Total Investments

The total estimated and actual investments are shown in Table XXI. It should be pointed out that the value of land includes only the cropland. The woodland on each farm is under the management of the forestry project and is not available to the tenant for use as a source of income. However, some of the tenants do receive income for setting out trees and performing other work for the forestry project on a daily wage or contract basis.

The returns on investments were less than estimated for Farm I in 1957 and Farm IV in both 1957 and 1958, while the rate of returns on investments was higher than estimated for Farm I in 1958 and Farms II,

TABLE XXI

A COMPARISON OF THE ESTIMATED AND ACTUAL CAPITAL RESOURCES INVESTED IN EACH
INTENSIVE FARMING UNIT, AMES PLANTATION, 1957 AND 1958

Item	Farm I				Farm II				Farm III				Farm IV				Farm V			
	1957		1958		1957		1958		1957		1958		1957		1958		1957		1958	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Land	\$16700	\$16700	\$16700	\$16700	\$12200	\$12200	\$12200	\$12200	\$9400	\$9400	\$9400	\$9400	\$7000	\$7000	\$7000	\$7000	\$9200	\$9200	\$9200	\$9200
Buildings, and Well	3666	8505	4031	9513	200	125	1246	710	-	-	950	1112	-	-	100	-	200	1529	1854	3438
Fencing, Farm Machinery, and Improvements	1713	1851	3419	1990	4774	5557	4379	5352	586	1189	1068	1379	2755	3574	2425	3257	4912	7438	4385	6829
Livestock $\frac{1}{2}$	6000	6000	6000	6600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	28079	33056	30150	34803	17174	17782	17825	18262	9986	10589	11418	11891	9755	10574	9525	10257	14312	18167	15439	19467

* Livestock includes milk quota in 1958 costing \$600.

III, and V in both 1957 and 1958 (Table XXII). Returns on investments were less than estimated for Farm I in 1957 because net income was less than estimated. Lower net income than estimated in both 1957 and 1958 with higher investments than estimated in 1957 accounts for the low rate of returns for Farm IV. Returns to investments were higher than estimated for Farm I in 1958 and Farms II, III, and V in both 1957 and 1958 because more net income was realized than anticipated.

According to the rate of returns on investments as shown in Table XXII, it can be said that all of the farms were operated efficiently, with the exception of Farm I in 1957. This is not to say that the farming operations could not be carried out more efficiently, but using the rate normally charged on borrowed funds as a minimum return for efficiency of operation, the farms were operated efficiently. The low rate of returns on investments on Farm I in 1957 came about because it was necessary to invest a considerable amount of capital in order to get the dairy into operation and because of the fact that milk sales were not begun until fall. Assuming that the returns to investments on Farm I in 1957 would remain the same over time, it would be necessary to reduce total investments, increase total production, or get out of the farming business. In this case, reduced investments or increased production would be necessary in order to obtain a higher rate of returns on investments. However, as witness the 1958 rate of returns, the returns on investments were higher in 1958.

Returns on investments were higher in 1958 than in 1957 on each of the five farms. This increase in returns was the result of increased production brought about by increased acreage and/or because the tenants

TABLE XXII

A COMPARISON OF THE ESTIMATED AND ACTUAL RATE OF RETURNS ON
CAPITAL INVESTMENTS ON EACH INTENSIVE FARMING UNIT,
AMES PLANTATION, 1957 AND 1958 ^{1/}

	Farm I		Farm II		Farm III		Farm IV		Farm V	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
1957	1.0	-2.7	5.0	21.0	15.6	22.7	13.8	4.6	11.0	12.8
1958	9.2	9.3	12.3	40.7	12.3	31.4	19.3	6.2	13.7	16.4

^{1/} These rates determined by dividing the net income by the total capital investment.

were more familiar with the operations on their respective farms which resulted in increased efficiency. In addition, some investments were made during the summer or latter part of 1957 and did not contribute as much to increased production and income in 1957 as in 1958. An example of this is land clearing which was performed in some instances after the 1957 crops were planted, and the land was not used for crop production, except infrequently for pasture, until 1958. In the case of Farm I, the increase in returns to investments in 1958 was attributed more to the fact that the dairy was in operation, or milk was sold, throughout all of 1958 compared with roughly three months in 1957.

The average rate of return on capital investments for all five farms was 11.7 per cent in 1957 compared with an estimated 9.3 per cent, or the rate of return on investments was 2.4 per cent higher than estimated. In 1958, the average rate of return was 20.8 per cent compared with an estimated 13.4 per cent, or the rate of return was 7.4 per cent higher than estimated. Thus, the rate of return on investments was 9.12 per cent higher in 1958 than in 1957 compared with an estimated increase of 1.69 per cent.

Returns to Additional Investments

Since much of the land on which these five tenant farms are located was not used for agricultural production prior to 1957, and since no capital investment in land was necessary for the initiation

of this project, the rate of returns on added investments, or total investments minus the value of the land, is more meaningful than the rate of returns on total investments (Table XXIII).

The deviation of the actual from the estimated rate of returns on additional investments was brought about for the same reasons given above in the discussion of returns on total investments. The rate of return on added investments on Farm I in 1958 and Farms III and V in 1957 was less than estimated, while the rate of returns on total investments for these farms in the years stated was higher than estimated. The rate of return on added investments was higher than estimated for Farm V in 1958 compared with a lower rate of return than estimated when including the value of the land in the investment. The rate of returns on added investments for the remainder of the farms was either higher or lower, than estimated as in the case of the rate of returns to total investments.

The average rate of return on added investments for the five farms was 62.2 per cent in 1957 compared with an estimated 72.9 per cent, or the rate of return was 10.7 per cent lower than estimated. The average rate of return on additional investments made in 1958 was 68.2 per cent, whereas, the rate of return was estimated to be 48.2 per cent, or the rate of return on additional investments in 1958 was 20 per cent higher than estimated.

Returns to Management and Family Labor

There was a net loss in returns to management and family labor

TABLE XXIII

A COMPARISON OF THE ESTIMATED AND ACTUAL RATE OF RETURNS ON
ADDED INVESTMENTS IN EACH INTENSIVE FARMING UNIT, AMES
PLANTATION, 1957 AND 1958 ^{1/}

	Farm I		Farm II		Farm III		Farm IV		Farm V	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
1957	2.5	-5.6	17.1	68.7	265.0	202.4	48.8	13.6	30.8	25.9
1958	20.6	17.7	38.7	122.6	74.7	149.8	73.0	19.6	44.0	31.0

^{1/} These rates determined by dividing the net income by the total investments minus the value of the land.

on Farm IV in 1957 and 1958. The operations on Farm I in 1958 and Farm II, III, and V in both 1957 and 1958 resulted in higher returns to management and family labor than estimated (Table XXIV). The net loss in returns to management and family labor as indicated above was brought about because there were less gross income, higher total costs, and investments were higher than anticipated. Although total costs were less than estimated and there was little variation between the estimated and actual investments on Farm IV in 1957 and 1958, returns to management and family labor were less than estimated because less gross income was realized than expected. A higher gross income than estimated accounts for higher returns to management and family labor than anticipated on Farm I in 1958 and Farms II, III, and V in 1957 and 1958. The increase in gross income was more than the returns to management and family labor on Farms I and II in 1957 and 1958 and Farm V in 1957, while this increase was less than the returns to management and family labor on Farm III in 1957 and 1958 and Farm V in 1958. In each instance wherein the increase in gross receipts was higher than the returns to management and family labor, total costs were higher than estimated. On the other hand, in each instance wherein the increase in gross income was less than the returns to management and family labor, total costs were less than estimated.

Net Income and Returns Per Acre

The estimated and actual net income with the landlord's and tenant's share on each farm is shown in Figure 6. The landlord's share

TABLE XXIV

A COMPARISON OF THE ESTIMATED AND ACTUAL RETURNS TO MANAGEMENT AND FAMILY LABOR
ON EACH INTENSIVE FARMING UNIT, AMES PLANTATION, 1957 AND 1958 ^{1/}

	Farm I		Farm II		Farm III		Farm IV		Farm V	
	1957	1958	1957	1958	1957	1958	1957	1958	1957	1958
Estimated	\$751	\$3,122	\$3,327	\$4,628	\$2,631	\$2,514	\$2,264	\$3,132	\$3,294	\$3,777
Actual	855	3,323	5,413	9,857	3,454	4,714	1,726	1,893	3,853	4,833

^{1/} Returns to management and family labor equals cash receipts plus inventory increases less cash costs less depreciation costs, less 5 per cent interest on investments. These returns do not include a value for perquisites.

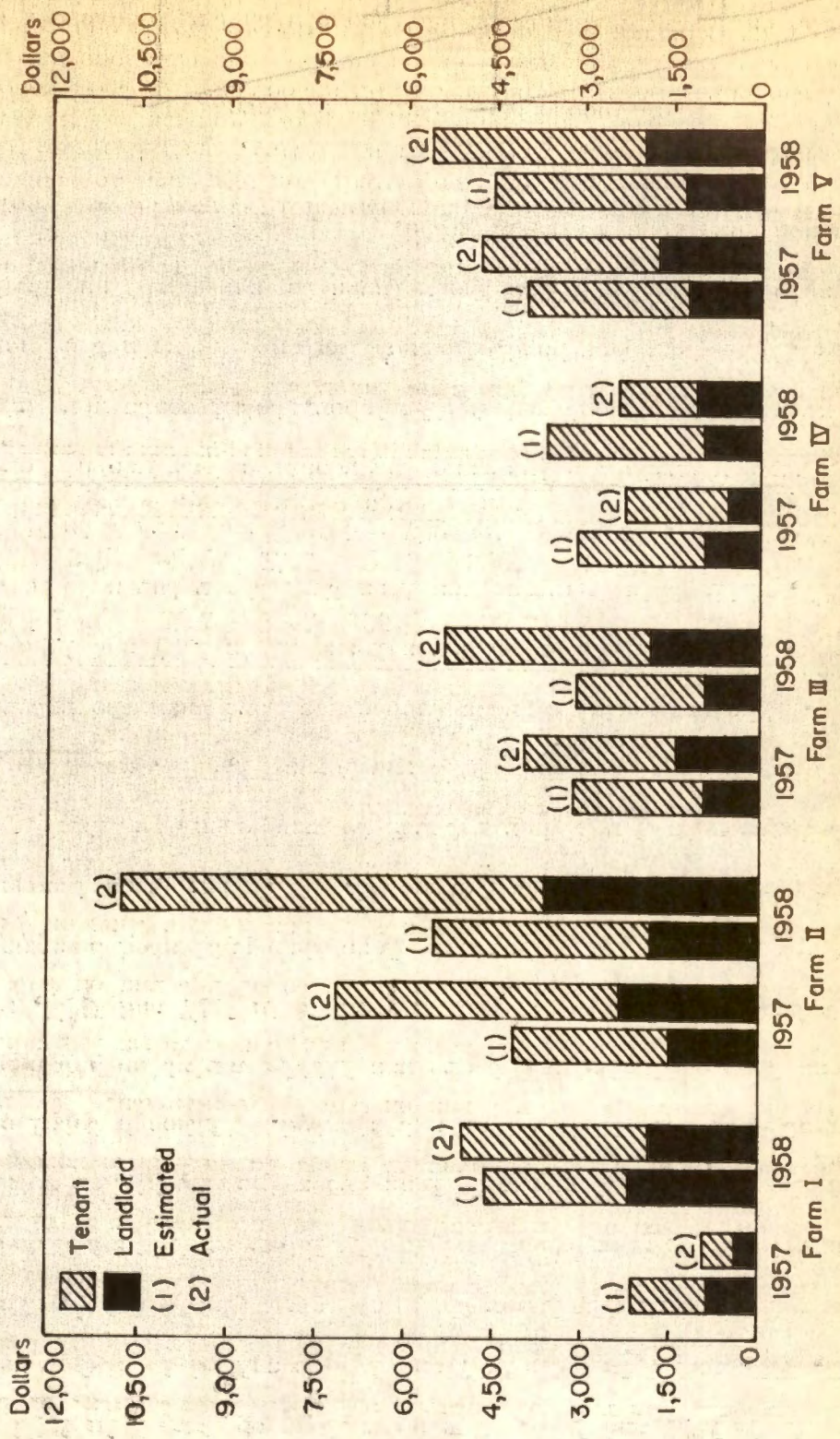


Figure 6. A comparison of the estimated and actual net farm income with the tenant's and landlord's estimated and actual share on each farm, Ames Plantation, 1957 and 1958. (Value of family labor not considered in arriving at this income.)

of net income from all five farms totalled \$6,373 in 1957 and \$10,127 in 1958 compared with approximately \$2400 cash rent paid by the five tenants in 1956. The average income for each tenant above operating costs was approximately \$2,539 in 1957 and \$3,808 in 1958, whereas, this income was about \$632 per tenant in 1956.

The average income per acre above operating costs was \$38 in 1957 compared with an estimated \$34, whereas, this income was \$54 per acre in 1958 compared with an estimated \$44. The actual income per acre above operating costs on each farm in 1957 and 1958 was as follows:

Farm	1957	1958
I	\$ 6	\$30
II	59	88
III	42	56
IV	32	34
V	52	61

From the information presented above it would appear that Farm II is the most efficiently operated. However, it should be pointed out that the tenant on Farm II had more labor available and had more cotton acreage, which is a high valued cash crop, than any of the other tenants. When considering this income per acre per man equivalent available, a different picture is presented. The average income per acre above operating costs per man equivalent on each farm in 1957 and 1958 was as follows:

Farm	1957	1958
I	\$ 4	\$34
II	18	27

Farm	1957	1958
III	\$29	\$39
IV	32	34
V	23	27

Using this income per acre per man equivalent as a measure of success, Farm IV would be the most efficiently operated in 1957 and Farm III in 1958.

CHAPTER VI

ITEMS AFFECTING THE ATTAINMENT OF PLANNED GOALS

Marketing Swine

Because of the seasonal variation in swine prices, it is necessary that as many swine as possible be sold during the spring and summer months when prices are normally the highest. The peak in hog prices in 1958 came in July with the top price being \$21.50 per hundredweight. According to Figure 7, prices received for swine in Tennessee during April through September were higher than the average price for the year while prices during January through March and October through December were less than the average price. It should be pointed out that the actual prices received for hogs on each farm were not used in the graphs presented in Figure 7, because hogs were not sold during all of the months in 1958 and thus did not present sufficient information necessary to construct these graphs. Instead, the average price for hogs sold each month in Tennessee in 1958 was used with the time and percentage of swine sales on each farm included in this study indicated the graph. Therefore, there is a slight variation in the actual prices received and prices used; however, it appears that the data used is accurate enough to suffice for this discussion.

As shown in Figure 7, approximately 64 per cent of the hogs sold on Farm I in 1958 were sold during July when prices were highest, while about 27 per cent were sold in October and 9 per cent in December.

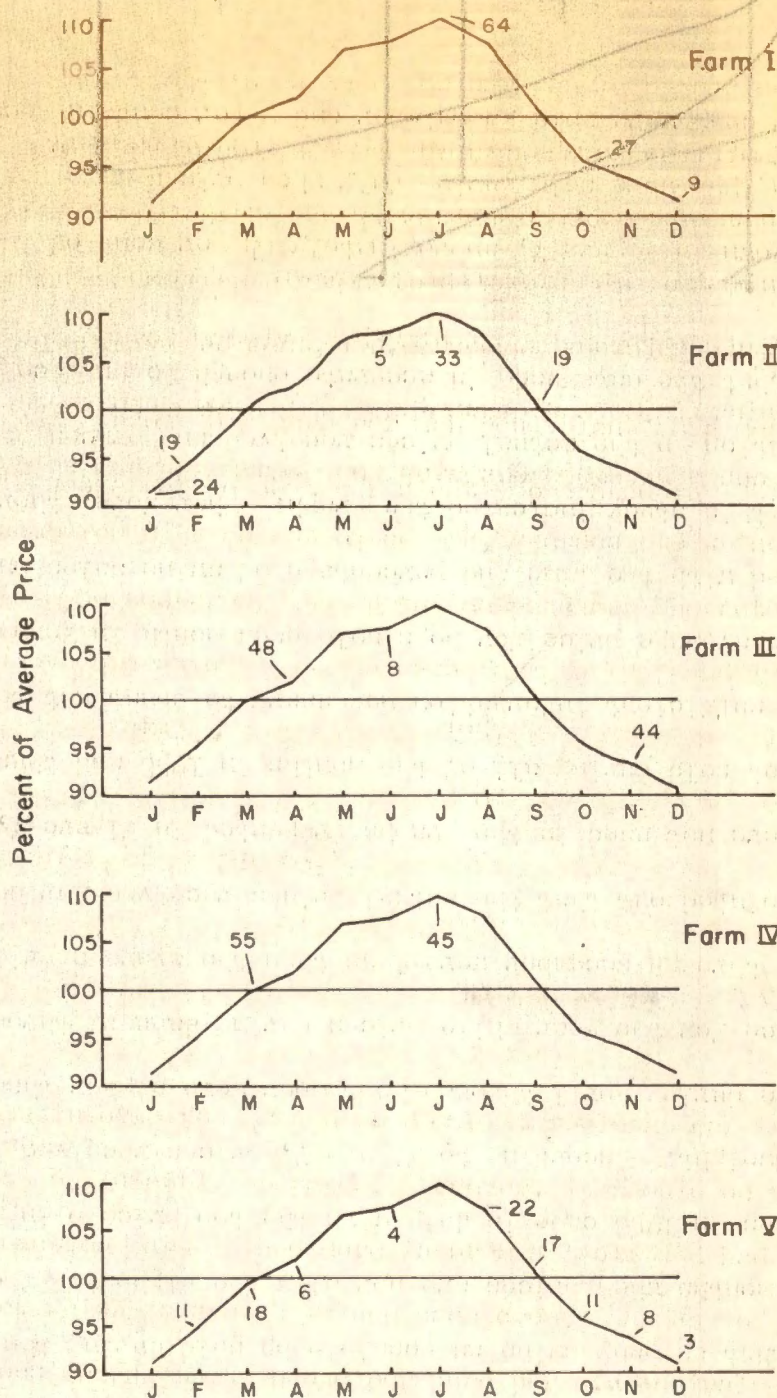


Figure 7. The percentage of total swine sales made on each farm in 1958 in different months and the price received as a percentage of the average price for the year—numbers on price line indicate the time and percentage of total sales.

Source: Agricultural Prices, Agricultural Marketing Service, United States Department of Agriculture, Hog Prices by Months in Tennessee in 1958.

The 27 per cent sold in October consisted of two sows and one pig. There was little variation in the price of sows during the period March through October although the price for sows in January, February, November, and December was lower than the remainder of the year.

Approximately 5 per cent of the hogs sold on Farm II was sold in June, 33 per cent in July when prices were highest, 43 per cent in January and February when prices were below the average price for the year, and 19 per cent in September when prices were about equal to the average price. The price of market hogs in January was approximately 9 per cent below the average price for the year and about 19 per cent below the top price in July. The price of market hogs in February was roughly 4 per cent below the average price.

About 48 per cent of the swine sales made on Farm III in 1958 were made during April, 8 per cent in June, and 44 per cent in November. The April price for hogs was about 2 per cent above the average for the year or about 8 per cent below the July price. Hog prices in June were approximately 2.5 per cent below the top price in July, while the November price was about 16 per cent below the July price, 6 per cent below the average price.

On Farm IV, approximately 55 per cent of the hogs sold were sold in March, with prices slightly less than the average. The remainder of the swine sold on Farm IV consisted of fourteen pigs sold in July at \$12 each. With the price of corn at \$1.51 per bushel in July and decreasing to \$1.11 in November, and market hogs selling for \$17.80 per hundredweight in December when these hogs would probably be the right

weight to bring the top market price, it would have been profitable to purchase corn and feed these hogs out under good management. However, it was not known in July how much the price of corn would decrease or what the selling price for market hogs would be by the time the pigs would be ready to market.

Approximately 32 per cent of swine sales on Farm V in 1958 was made when prices were above the average for the year while about 17 per cent was sold at approximately the average price, and around 43 per cent was sold when prices were below the average price for the year.

From the standpoint of selling at the time to get the highest cash income, Farms I and IV are the most desirable while Farm V is the least desirable. As indicated previously, approximately 64 per cent of the swine sold on Farm I and 45 per cent of the sales on Farm IV were made in July when prices were highest, while no sales were made on Farm V in either June or July except for three sows sold in June. Only 42 per cent of the market hogs sold on Farm V was sold when prices were above the average for the year.

It is recognized that it is sometimes difficult to market as many hogs as desirable during the period April through September. However, unless the availability of feed or other factors make it more favorable to sell at times other than the period when prices are normally the highest, added income is possible by selling more hogs in the spring and summer months. One of the major problems encountered in increasing swine sales during this period is getting the sows to farrow at the proper time. If farrowing does not take place at the proper time to market the hogs when prices are above average, the farmer has no

alternative but to sell the hogs as soon as they are fed to the top market weight unless he has some surplus low cost feed such as pasture which will enable him to delay topping out his hogs, at a relatively low added cost, until he can get a higher price. However, if the farmer has some alternative use for this surplus feed, it is doubtful if it would pay to delay the sale of his hogs.

Cotton Production at Different Levels of Mechanization

The equipment used on each of the five farms included in this study was essentially the same except for a cotton picker and equipment used for applying pre-emerge and defoliate on Farm I, IV, and V in 1958. This equipment was leased and/or purchased by the plantation management and held in a special account for tenant use. The tenants using this equipment paid a custom rate for its use.

Net returns per acre of cotton produced in 1958 were higher on the farms where the cotton was picked by hand (Table XXV). The yield per acre was higher on these farms and the grade of cotton was generally higher. A portion of the decreased yields obtained on Farms I, IV, and V can be attributed to the use of the mechanical picker. Because the cotton picked by hand was picked cleaner and as it matured, little cotton was lost as a result of it falling off the plants. On the other hand, cotton harvested by mechanical means could not be accomplished until practically all of the bolls were mature, resulting in the loss of some of the early maturing bolls and/or a decrease in the grade and selling price because this early maturing cotton had become stained.

TABLE XXV

COSTS AND RETURNS IN PRODUCING AN ACRE OF COTTON ON EACH
INTENSIVE FARMING UNIT, AMES PLANTATION, 1958

Item	Farm I 1/	Farm II 2/	Farm III 2/	Farm IV 1/	Farm V 1/
Receipts					
Lint	\$153.50	\$274.30	\$332.33	\$198.66	\$186.20
Cotton seed	18.50	27.12	31.40	23.51	25.10
Total receipts	172.00	301.42	363.73	222.17	211.30
Cash Costs					
Seed	2.50	3.75	2.76	2.04	2.06
Fertilizer planting time	10.75	10.75	10.75	10.75	10.75
Side dress	4.20	4.20	4.20	4.20	4.20
Pre-emerge	7.00	---	---	6.88	7.00
Poison	9.75	13.00	9.73	6.54	8.25
Defoliate	7.50	---	---	7.39	7.50
Picking cotton	25.24	---	---	34.37	27.34
Tractor operating cost 3/	5.91	5.39	6.43	19.49	5.85
Ginning	12.09	18.20	21.65	14.54	14.44
Sales cost	1.63	2.69	3.97	2.17	2.13
Total cash costs	86.57	57.98	59.49	98.37	89.52
Non-Cash Costs					
Labor	11.30	83.80	100.10	11.05	8.75
Tractor (depr. & intst.)	.30	.30	.30	.30	.30
Land (interest & taxes)	6.00	6.00	6.00	6.00	6.00
Total non-cash costs	17.60	90.10	106.40	17.35	15.05
Total Cash and Non-Cash Costs	104.17	148.08	165.89	115.72	104.57
Net returns above all costs	67.83	153.34	197.84	106.45	106.73
Net returns to labor	79.13	237.14	297.94	117.50	115.48
Net returns/hr. of labor	3.50	1.41	1.49	5.31	6.60

1/ High level of mechanization included custom mechanical cotton picking and chemical defoliation and weed control.

2/ Low level of mechanization. Hand picking and hoeing.

3/ Rural Research Series Monograph No. 268, Estimated Costs and Returns from Major Enterprises, Tennessee, 1952. Adjustments made for changing conditions.

In addition, the cotton picked by mechanical means contained more foreign matter than the cotton picked by hand which also tended to reduce the quality of the cotton.

Although the cash costs required to produce an acre of cotton was higher on the farms using a mechanical picker, total cash and non-cash costs were higher on the farms where cotton was picked by hand. Higher cash costs per acre on Farms I, IV and V were brought about by custom rates paid for the use of the picker and equipment used in applying pre-emerge and defoliate. Higher total costs on Farms II and III resulted from higher non-cash costs brought about primarily because the cotton on these farms was picked by hand, by family labor.

The average cost in producing and the average net income from a 500 pound bale of cotton on each farm in 1958 was as follows:

Farm	Cost	Net Income
I	\$104	\$ 68
II	92	95
III	85	100
IV	93	85
V	85	86

The cost in producing 500 pounds of cotton was higher on two of the three farms where the cotton was picked by mechanical means than the cost on the two farms where cotton was picked by hand. The cost in producing 500 pounds was the same for two of the farms with different levels of mechanization. It is interesting to note that a higher net income was realized from the two farms with the low level of mechanization.

There was a range of fourteen to 101 man-hours required to produce 500 pounds of lint cotton among the five farms (Table XXVI). The labor requirements on the three farms using a mechanical picker averaged approximately eighteen man-hours per 500 pounds of lint cotton produced compared with an average of 103 man hours on the two farms where cotton was harvested by hand. There are two reasons which account for most of the variation in labor requirements on these farms. First, mechanical picking required about one man-hour per 500 pounds of lint cotton compared with approximately eighty-five man-hours when harvested by hand. Second, the use of pre-emerge reduced labor requirements for hoeing and chopping by about fifty per cent.

The productivity of labor was much higher on the farms with a higher level of mechanization. The average net returns per man-hour of labor were \$5.31 on the farms with the high level of mechanization compared with \$1.45 per man-hour on the farms with a low level of mechanization, or the productivity of labor on the farms with a high level of mechanization was approximately three and one-half times the productivity of labor on the farms with a low level of mechanization.

Method of Financing Operations

The will Trustees on the Ames Plantation set up a \$30,000 revolving fund to be used in operating all of the tenant units on the plantation, including the five farms included in this study. These funds are used for the plantation's share of capital items and operating expenses on each farm and any funds that may be needed by the tenants for living

TABLE IXVI

LABOR REQUIREMENTS FOR PRODUCING AN ACRE OF COTTON ON EACH
INTENSIVE FARMING UNIT, ANES PLANTATION, 1958

Operation	Farm I 1/		Farm II 2/		Farm III 2/		Farm IV 1/		Farm V 1/	
	Man	Tractor	Man	Tractor	Man	Tractor	Man	Tractor	Man	Tractor
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Break	1.5	1.5	1.4	1.4	1.7	1.7	1.7	1.7	1.4	1.4
Disc	.6	.6	.6	.6	.8	.8	.8	.8	.6	.6
Harrow	.2	.2	.2	.2	.3	.3	.4	.4	.2	.2
Plant	1.2	.6	1.2	.6	1.2	.6	1.4	.7	1.2	.6
Applying pre-emerge	.4	.3	-	-	-	-	.4	.3	.4	.3
Applying poison	2.5	2.0	2.5	2.0	2.5	2.0	2.5	2.0	2.5	2.0
Cultivate	2.0	2.0	2.5	2.5	3.0	3.0	3.0	3.0	2.0	2.0
Hoing and clodding	12.0	-	20.7	-	20.7	-	6.0	-	7.0	-
Applying defoliate	.3	.2	-	-	-	-	.3	.2	.3	.2
Harvesting	1.3	1.2	137	-	168	-	4.7	4.7	1.3	1.2
Hauling	.6	.5	1.5	1.0	2.0	1.5	.9	.8	.6	.5
Totals	22.60	9.10	167.60	8.30	200.2	9.90	22.10	14.60	17.50	9.00

1/ High level of mechanization, custom machine picked and chemical weed control.

2/ Low level of mechanization, hand picking and hoeing.

expenses, operating expenses, and, in some cases, capital expenses. Capital provided for the tenants from this revolving fund for living expenses will hereafter be referred to as "furnish." All capital furnished the tenants for living expenses and capital borrowed for operating expenses and/or capital investments, is to be repaid to the revolving fund during the year in which they are received; however, if the tenant has saleable assets such as cotton, hogs, or other products to be sold, he may repay the borrowed money in the early part of the succeeding year, or whenever the products are sold.

As would be expected, the majority of the furnish was generally made during the spring and summer months when operating costs were highest and income the lowest (Table XXVII). However, an equal amount of furnish was made each month on Farm I since expenses were more evenly distributed throughout the year on this farm than on the other farms. This particular furnish was an advance made to the tenant on each month's income from milk sales.

The total amount of furnish provided each tenant in 1958 was less than in 1957 except for the tenant on Farm I in which case the total amount of furnish was higher in 1958. Furnish was lower in 1958 for all of the tenants except for the tenant on Farm I because the tenants had more capital available for living expenses in 1958 as a result of higher income in 1957 than in 1956. In addition, the tenants had less capital investments in 1958 which enabled them to have more capital left for living expenses.

If there are periods when the revolving fund is getting low and there is a possibility that the available funds may become exhausted,

TABLE XXVII

TENANT'S INCOME, EXPENSE, AND FURNISH BY MONTHS ON EACH FARMING UNIT,
AMES PLANTATION, 1957 AND 1958

	J	F	M	A	M	J	J	A	S	O	N	D	Total
Farm I	Income	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4	\$ 270	\$ 250	\$ 991	\$ 520	\$ 2035
	Expense	-	-	-	-	-	-	340	173	364	191	545	2790
	Furnish	-	-	-	-	-	-	89	-	150	150	150	539
Farm I	Income	-	275	306	344	366	480	365	410	610	1233	814	5758
	Expense	51	584	140	153	405	967	273	333	479	506	83	4136
	Furnish	150	150	150	150	150	150	150	150	150	150	150	1800
Farm II	Income	165	165	165	-	-	73	238	249	3252	1558	705	6643
	Expense	-	-	69	36	430	727	61	60	275	80	268	2157
	Furnish	51	-	50	50	-	50	50	130	21	-	-	402
Farm II	Income	359	419	140	-	91	312	446	-	4357	2953	536	10539
	Expense	20	7	141	154	692	862	305	317	460	318	130	3571
	Furnish	-	-	50	50	75	50	50	-	-	-	-	275
Farm III	Income	-	-	-	-	-	-	-	945	1580	914	214	3653
	Expense	-	-	-	-	344	362	20	293	65	29	267	1484
	Furnish	-	-	-	-	-	25	59	-	80	-	-	264
Farm III	Income	-	-	-	423	-	183	-	129	1258	2708	181	4882
	Expense	-	-	50	165	130	804	444	50	150	236	1	1771
	Furnish	-	-	-	-	30	30	35	-	-	-	-	95
Farm IV	Income	-	-	-	-	-	-	-	37	150	1700	900	2787
	Expense	-	-	-	-	516	173	-	51	199	60	152	1421
	Furnish	150	-	-	-	63	-	-	45	50	50	-	383
Farm IV	Income	82	-	484	-	-	-	126	35	249	2289	127	3392
	Expense	4	-	16	44	70	380	65	93	186	302	40	1200
	Furnish	-	-	-	-	-	-	-	-	-	-	-	-
Farm V	Income	-	173	173	45	83	83	83	725	58	237	2492	4189
	Expense	-	-	98	65	552	741	66	132	112	10	360	2338
	Furnish	68	-	-	-	50	-	-	-	-	150	-	268
Farm V	Income	90	564	475	374	216	606	125	474	568	1259	2496	7640
	Expense	1	6	113	125	697	730	247	214	294	662	244	3445
	Furnish	-	-	-	-	-	-	-	-	-	-	-	-

purchases may be made by the landlord with the payment being deferred until income is available, usually in the fall. With the exception of Farm I, in which case the income was distributed more evenly throughout the year in 1958, most of the income received by the landlord was received from September through December (Table XXVIII). The tenants' income was characterized in the same way; however, some of the tenants received a greater proportion of their income prior to September than did the landlord as a result of income received from custom work performed for other tenants and work performed for the forestry project.

Share-lease Arrangements

Not only was the objective in setting up the five farms with varying share-lease arrangements to determine which type of lease would best serve the purpose of increasing the returns to the Ames Plantation, but also to increase the income and raise the standard of living for the tenants operating these farms. In addition, it was hoped that a share-lease arrangement might be selected which could best be used by land owners and tenants in other areas with the same type of farming operations.

In order to evaluate the accomplishments of the individual farms under a given share-lease arrangement, the ability of the tenant should be taken into consideration. It is difficult to determine to what extent the success of a farming operation is due to added incentive brought about by the type of share-lease arrangement under which the farm is operated, or to what extent the success is due solely to the ability of the operator.

TABLE XXVIII

LANDLORD'S INCOME AND EXPENSE BY MONTHS ON EACH INTENSIVE FARMING UNIT,
AMES PLANTATION, 1957 AND 1958

	Farm I			Farm II			Farm III			Farm IV			Farm V		
	1957	1958		1957	1958		1957	1958		1957	1958		1957	1958	
	Inc.	Exp.	Inc.	Exp.	Inc.	Exp.	Inc.	Exp.	Inc.	Exp.	Inc.	Exp.	Inc.	Exp.	Inc.
Jan.	\$ -	\$ -	\$ 41	\$ -	\$ 179	\$ 17	\$ -	\$ 50	\$ -	\$ -	\$ 27	\$ 1	\$ -	\$ 1	\$ -
Feb.	-	25	275	686	-	15	-	-	-	-	-	-	-	194	3
March	-	19	306	152	-	80	-	62	-	-	161	6	-	194	27
April	-	272	343	226	-	75	-	13	210	-	-	12	-	79	55
May	-	533	366	480	-	150	-	133	-	96	-	5	-	-	61
June	-	28	390	1110	-	440	-	90	51	47	-	116	-	-	331
July	-	340	495	-	178	125	-	-	-	-	43	15	-	87	73
Aug.	270	173	365	189	-	160	-	24	-	11	-	5	348	237	38
Sept.	250	364	410	388	70	70	12	75	20	56	-	-	25	79	51
Oct.	990	191	640	560	2154	200	576	20	75	42	83	65	35	284	125
Nov.	520	534	1233	591	1459	115	1330	9	63	14	763	11	125	630	146
Dec.	-	-	844	97	536	83	64	44	1	71	42	65	1243	15	87
Total	2034	2479	5667	4520	4921	1530	2243	520	503	407	1119	301	1776	821	997

In selecting the type of share-lease arrangement that is best suited for the landlord, the amount of capital investments required and the returns per dollar invested must be considered. A landlord with limited capital resources might have to settle for lower investments with higher returns per dollar invested than would the plantation even though a higher investment with a lower rate of return would result in increased net income.

There was considerable variation in the amount invested by the landlord and tenants among the five farms because of differences in the share-lease arrangements, size, and type of farming operation (Table XXIX). For example, investments made by the landlord on Farm I, on which a dairy unit was the major enterprise, were higher than any of the other four farms and were two times the average investment on these remaining farms on which cotton was the major enterprise. Although the total investment made by the tenant on Farm I was higher than the total investment made by the tenant on Farms III and IV, the tenants on Farms II and V each invested more than the tenant on Farm I. The rate of returns on investments made by the tenants was higher than the rate of return on investments made by the landlord on all farms except Farms I, IV, and V in 1957 and Farm IV in 1958.

There were ninety-eight acres of cropland per man equivalent on Farm I compared with thirty-eight acres on Farm II, sixty-five acres on Farm III, forty-one acres on Farm IV, and forty acres on Farm V. Farm II, with the lowest acreage per man equivalent, had the highest net returns per acre for both the landlord and tenant, while Farm IV, the only farm with a one-fourth landlord and three-fourths tenant share-lease arrangement, with only three acres more per man equivalent than

TABLE XIX

LANDLORD'S AND TENANT'S TOTAL INVESTMENT, AVERAGE INVESTMENT PER ACRE, NET RETURNS PER ACRE, AND RATE OF RETURNS ON INVESTMENTS FOR EACH INTENSIVE FARMING UNIT, AMES PLANTATION, 1957 AND 1958

	Total Investments		Average Investments/Acre		Net Returns/Acre and Rate of Net Returns on Investments							
	1957	1958	1957	1958	1957	1957	1958					
	Landlord Tenant	Landlord Tenant	Landlord Tenant	Landlord Tenant	Landlord Tenant	Landlord Tenant	Landlord Tenant					
Farm I	\$29,833	\$3,223	\$30,719	\$4,084	\$179	\$19	\$174	\$24	\$2	\$-7	\$11	\$8
									(1)	(-19)	(5)	(18)
Farm II	16,936	5,600	11,221	5,641	137	44	108	41	19	12	30	31
									(18)	(20)	(25)	(44)
Farm III	9,789	800	11,171	720	104	-	119	0	15	11	20	20
									(11)	(45)	(36)	(75)
Farm IV	7,974	2,800	7,917	2,940	114	40	113	33	8	-1	11	-2
									(7)	(-3)	(9)	(-3)
Farm V	12,667	5,500	14,517	4,950	134	60	153	54	29	7	22	13
									(23)	(6)	(13)	(14)

() - Rate of returns on investments.

Farm II, had the lowest net income per acre in 1958 for both the landlord and tenant.

It is interesting to note the results of operations on Farms II and V which have the same type of share-lease arrangement (Table III). The acreage of crops per man equivalent was approximately the same for both farms. Corn acreage was about the same on each farm while cotton acreage was thirty and forty acres in both 1957 and 1958 respectively on Farm II with twenty acres on Farm V in both 1957 and 1958. There was approximately two times more swine sold on Farm V than on Farm II in 1958. With twenty acres more cropland in Farm II than in Farm V, net returns per acre were \$30 for the landlord and \$31 for the tenant on Farm II and \$22 for the landlord and \$13 for the tenant on Farm V. Returns per acre were higher on Farm II than on Farm V because of a higher income from cotton sales brought about by the increased cotton acreage. The difference in net income per acre in 1958 for the landlord and tenant on Farm V was greater than on Farm II because costs accruing to the tenant were only slightly higher on Farm II while total income for the tenant on Farm II was about \$4,000 higher.

Another interesting comparison is the result of operations on Farms III and IV. The only difference in the share-lease arrangements on these two farms is that income and expenses, except the cost of hired labor associated with cotton production, is divided one-third for the landlord and two-thirds for the tenant on Farm III and one-fourth for the landlord and three-fourths for the tenant on Farm IV. The available labor was roughly the same on each farm although there was

sixty-five acres of cropland per man equivalent on Farm III compared with forty-one acres on Farm IV. Corn acreage was eleven acres higher and cotton acreage was 1.5 acres less on Farm III than Farm IV. Net returns per acre was \$20 for the tenant and landlord on Farm III in 1958 while these returns were \$11 for the landlord and a loss of \$2 per acre for the tenant on Farm IV. Although cotton acreage was less on Farm III than on Farm IV, cotton receipts were higher on Farm III because of higher yields per acre. It would seem that the tenant on Farm IV might try harder to produce a better crop of cotton than the tenant on Farm III since he invested a greater percentage of the total cost and received a greater percentage of the income. However, cotton yields on Farm IV were about average while the yield on Farm III was considerably above average. The increase in cotton yields on Farm III is explained in part by the fact that the tenant is superior in physical ability in that he is approximately fourteen years younger than the tenant on Farm IV. Another factor which may have tended to decrease yields on Farm IV was that, being older, the tenant may have found it somewhat difficult to accept changes in farming methods in contrast to what he had been accustomed.

Of the five farming operations, Farm I, with the tenant having a lower and the landlord a higher share than on any of the other farms, was the fourth most profitable in terms of net returns per acre. The rate of returns for the landlord on Farm I was the lowest among the five farms, while the rate of returns for the tenant was the third highest. It is interesting to note that on Farm I, with the tenant paying a smaller percentage of the expenses and receiving a smaller percentage of the

income than on any of the other four farms, cotton yields averaged less per acre than on any of the other four farms. It may be that the tenant did not have the incentive under the share-lease arrangement on Farm I that the other tenants had, resulting in lower cotton yields. On the other hand, it may be that the competition for labor provided by the dairy resulted in lower cotton yields. This is difficult to ascertain, but it is probable that if the farming operation on Farm I were similar to the other four farms, cotton yields would be higher.

From the above discussion, there is no evidence to indicate that a higher than two-thirds share of the costs and income by the tenant increases the incentive on the part of the tenant. There is some evidence, however questionable, to indicate that a higher than one-half share of the expenses and income by the tenant may increase the incentive on the part of the tenant and result in increased net income.

A Review of Factors Affecting the Attainment of Planned Goals

The following discussion includes the major reasons for the deviations between the estimated and actual performance on each farm in 1957 and 1958.

The selection of a new tenant in September, 1957, probably prevented the attainment of various planned goals on Farm I in 1957. Because he had to harvest the crops on the farm he had left, the tenant did not have sufficient time to do a good job of harvesting the crops in 1957. It was felt that these limitations placed upon the tenant contributed to a low yield of cotton with a lower grade and selling price

than anticipated. Total cash income and inventory increases above all cash costs in 1958 exceeded the estimated primarily because more heifers were raised with a higher value than estimated.

The planned goal, in terms of net cash income, was exceeded on Farm II in 1957 and 1958 primarily because of higher cotton yields than anticipated. In addition to having a higher average yield per acre than estimated, an additional ten acres added to the allotment in 1958. The addition of these ten acres to the 1958 cotton crop accounts for the major part of the increase in total production in 1958.

A higher yield of cotton than estimated in both 1957 and 1958 on Farm III was brought about primarily by the skill in producing cotton possessed by the tenant.

Lower total corn production, brought about as a result of less acreage and slightly lower yields per acre than expected, accounts for the major part of the deviation of the estimated from the actual results on Farm IV in 1957. The returns to operations on Farm IV in 1958 were less than anticipated primarily because of reduced swine sales. Since the plans for 1958 were made out before the 1957 corn crop was harvested, the estimated swine sales were made on the basis of a higher corn yield than was actually obtained in 1957. As a result of the low corn yield in 1957, swine production was reduced by approximately 50 per cent.

Net returns on Farm V in 1957 exceeded the estimated net returns because of an increase in cotton yields and an increase in the value of corn on hand which was brought about by increased acreage and total production. The higher cotton yield can be attributed to the favorable rainfall, while the increased corn acreage came about because more land

was cleared before planting time than anticipated. The returns in 1958 on Farm V were higher than estimated because of corn sales brought about by a change in plans in which the corn acreage was increased as a result of the ability of the tenant demonstrated in growing corn in 1957.

Various other major items affecting the attainment of planned goals which have been discussed are the time of marketing hogs, cotton production at different levels of mechanization, the method of financing the operations, and share-lease arrangements.

It was found that a considerable number of the hogs were sold at times when hog prices were well below the average price for the year. Unless the availability of feed or some other factor makes it more favorable to sell during periods of low prices, it seems that more hogs should be sold at times when prices are normally higher.

The net income per bale of cotton produced in 1958 was higher on the farms where cotton was picked by hand than on the farms where cotton was picked by mechanical means. However, because of the tremendous difference in the amount of labor required in picking cotton by hand compared with picking with a mechanical picker, picking by hand is practical only if there is ample labor available. If the cotton acreage is relatively small, it may be that picking cotton by hand would be more economical than picking by mechanical means.

The policy followed in financing the operations consists of a revolving fund kept by the landlord to finance his share of the operations, with the tenant permitted to borrow money from this fund whenever needed. The tenant is to repay the loan during the year in which it is borrowed, if possible. However, if the tenant does not have the money

but has saleable assets sufficient to cover the loan, he may repay the borrowed money the following year or whenever such sales are made. In the event that the revolving fund is exhausted and additional purchases must be made, the landlord makes these purchases with the payment being deferred until income is available.

There is little evidence to indicate variations in initiative of the tenants brought about by the various share-lease arrangements. However, there is some indication that a higher than one-half share of the income and expenses resulted in increased initiative, although there is no indication that a higher than two-thirds share of income and expenses resulted in added initiative. It should be pointed out, however, that the tenant on the farm with a three-fourths share was about sixty-five years of age with physical limitations. Therefore, it was difficult to determine if a higher than two-thirds share of income and expenses resulted in increased initiative because of the limited ability of this tenant.

A list of several of the changes in the planned and actual performance on each farm in 1957 and 1958 is shown in Table XXX.

Cotton acreage was higher than planned on Farm II in 1958 as a result of an increase in the allotment.

Higher cotton yields than estimated were obtained in five cases, while lower yields than estimated were obtained in three cases. The average yield of lint cotton per acre was equal to the estimated yield in two cases. A more optimum amount of rainfall in both 1957 and 1958 than anticipated accounts for much of the increase in yields. A considerable amount of labor was hired on Farm V in 1957 which, in some

TABLE XXX

A COMPARISON OF GOALS EXCEEDED WITH GOALS NOT ATTAINED ON EACH INTENSIVE FARMING UNIT, ANES PLANTATION, 1957 AND 1958

	Planned Goals Exceeded										Planned Goals Not Attained													
	Farm I 57	Farm I 58	Farm II 57	Farm II 58	Farm III 57	Farm III 58	Farm IV 57	Farm IV 58	Farm V 57	Farm V 58	Totals 57	Totals 58	Farm I 57	Farm I 58	Farm II 57	Farm II 58	Farm III 57	Farm III 58	Farm IV 57	Farm IV 58	Farm V 57	Farm V 58	Total 57	Total 58
Cotton Acreage											1	1											1	1
Cotton Yield Per Acre											2	2											2	2
Cotton Price											3	3											3	3
Corn Acreage											3	3											3	3
Corn Yield Per Acre											1	1											1	1
Pig Crop											3	3											3	3
Number of Hogs Sold											1	1											1	1
Hog Price											1	1											1	1
Land Clearing											4	4											4	4
Pasture Acreage											3	3											3	3
Miscellaneous:											2	2											2	2
Unforseen Sales											1	1											1	1
Crop Loss											2	2											2	2
Change in Objective of Landlord											1	1											1	1
Change in Objective of Tenant											1	1											1	1
Hired Labor											1	1											1	1
Totals	2	4	3	8	4	7	2	1	5	7	17	26	5	4	1	2	6	2	8	6	3	5	23	19

instances, enabled the tenant to devote more time to producing cotton. It was felt that changing tenants on Farm I in 1957 influenced a lower yield of cotton since he was faced with harvesting crops on the farm he had left in addition to Farm I, and as a result did not pick the cotton as cleanly as desired. Cotton yields on Farm IV were reduced in 1957 because of physical limitations on the part of the tenant since he was about sixty-five years of age. The yield of cotton on Farm V in 1958 was not only lower than estimated for 1958, but it was lower than the actual yield in 1957. This was the only farm with a lower yield in 1958 than in 1957. Although the yield of cotton on this farm was only slightly less than estimated in 1958, it is likely that the use of a mechanical picker caused some of this decrease in yield.

A higher selling price for cotton than estimated was obtained in eight cases, while a lower price than estimated was obtained in two cases. The higher prices received for cotton were brought about by higher average market prices than were expected. The lower prices received came about as a result of a lower grade of cotton produced than anticipated, even with higher average market prices.

Corn acreage was higher than estimated in seven cases, while this acreage was less than estimated in three cases. The increases in corn acreage were brought about primarily because more land was cleared than expected or it was felt that the tenant could grow more corn than originally planned. Lower corn acreage than estimated was very slight on Farm III in 1957 and Farm IV in 1958. However, the decreased corn

acreage on Farm IV in 1957 was substantial and came about because it was felt that the proposed acreage would be too much for the tenant considering his age and physical capabilities.

The average corn yield per acre was higher than estimated in two cases and lower than estimated in six cases. More rainfall than expected and/or higher skill in growing corn than believed possible was primarily responsible for the increased yields. An over-estimation of the productive potential of the soils on which the corn was produced or less skill on the part of the tenant were the major factors responsible for lower corn yields than estimated. Since Farms II and III had a higher yield than estimated in 1958 compared with a lower yield than estimated in 1957, it seems probable that the tenants on these farms learned better production techniques from the supervision provided in the first years' operations.

A larger pig crop than estimated was obtained in one case, while a smaller pig crop than estimated was obtained in five cases.

The number of hogs sold was higher than estimated in one case, whereas, fewer hogs than estimated were sold in seven cases. The increase in the number of hogs sold on Farm V in 1958 came about because of a larger pig crop than estimated. In some of the instances wherein the number of hogs sold was less than estimated, this decrease was only slight. However, some of the sales were considerably less than anticipated and came about because of a reduced pig crop, except for Farm IV in 1958. While there was a smaller pig crop on Farm IV in 1958, this reduction in hog production came about as a result of a change in plans.

It was necessary to reduce the number of swine breeding stock on hand and hog production as a whole because of the low yield of corn made in 1957.

More land was cleared than anticipated in three cases, and less land was cleared than anticipated in two cases. The primary reason for increased land clearing was that land clearing was continued later in the spring than expected because of less rainfall than anticipated. Much of the land which was not cleared as anticipated was land which was relatively low and remained too wet for clearing to be accomplished.

Pasture acreage was larger than estimated in two cases, and this acreage was less than estimated in two cases. It was found that more pasture was needed for the dairy cows on Farm I, especially winter supplementary pasture, to reduce the amount of roughage and concentrates fed to this livestock. Wild pasture was primarily used for all livestock, except for hogs, on Farm III in 1957. Since the tenant had two head of workstock and four milk cows on a limited amount of this pasture, the decision was made to seed some pasture in 1958 to keep this livestock in good condition. Lower pasture acreage than estimated on Farm III in 1957 resulted from the decision made by the tenant not to seed additional pasture because he felt that he could not afford to do so for financial reasons. Reduced pasture acreage on Farm IV in 1957 resulted from land clearing not progressing as planned.

While there were various increases or decreases in the income and expenses, there were sources of added income and losses which were not foreseen when the plans were made. Unforeseen sales were made in two cases,

while there was a total crop loss in three cases. Unexpected corn sales resulted from increased corn acreage and yield per acre on Farms II and V in 1958. No income was realized from soybeans on Farms II and V in 1957 because unfavorable weather prevented the harvesting of this crop. No income was realized from lespedeza grown for seed on Farm IV in 1957 because of a crop failure.

Changes in the objectives of the landlord and tenant resulted in plans not carried out as planned in four cases. The decision was made not to seed oats for grain as planned on Farm I in 1957, since more time and effort was needed to make other improvements which seemed more important to the success of the dairy operation. A change in plans on Farm III in 1957 came about as a result of the decision made by the tenant not to seed additional pasture because of capital limitations. It was the opinion of the landlord that the planned corn acreage on Farm IV was too much for the tenant because of limitations in his physical ability and this acreage was reduced. The decision was made by the landlord to increase corn acreage on Farm V in 1958 because of the good job the tenant had done in producing corn in 1957.

More labor was hired than estimated in four cases, while less labor was hired in one case, and no labor was hired in one case even though it was anticipated additional labor would be needed. Increased labor requirements on Farm I in 1957 resulted from the selection of a new tenant for this farm. Additional labor was required on Farm IV in 1958 because of physical limitations on the part of the tenant. More labor was needed than expected in getting Farm V into operation in 1957.

Less labor was required than estimated on Farm III in 1957 because of the superior ability of the tenant in farming, while no labor was required in 1958.

CHAPTER VII

SUMMARY AND CONCLUSIONS

This study consisted of a comparison of the plans and actual performance of five farms at the Ames Plantation, Grand Junction, Tennessee.

The most common factor affecting the attainment of planned income on each farm was the deviation of actual prices received for farm products sold from the prices anticipated. The factor which had the greatest effect on the attainment of planned income was the deviation in the estimated and actual total crop yields. These deviations in the planned and actual total crop yields were brought about by either higher or lower yields per acre than estimated and higher or lower crop acreage than estimated. Deviations between the estimated and actual yields were affected most by the weather and ability of the tenants. There were various factors affecting the deviations between the estimated and actual crop acreage. The most common factors affecting these deviations were the amount of land cleared before planting time, physical and technical ability of the tenants, and changes in the objectives of the landlord and tenants.

A higher grade of cotton with a higher selling price was obtained on the farms where cotton was picked by hand than when picked with a mechanical picker. However, there was a great variation in the amount of labor required to produce a 500 pound bale of cotton with an average of eighteen man-hours required when picked with a mechanical

picker and applying chemical weed control compared with about 103 man-hours when picked by hand and no chemical weed control used.

Since a higher grade of cotton with a higher selling price was obtained when picked by hand, it would seem that picking cotton by hand would be practical if the acreage is small and sufficient labor is available for which there is no alternative use that is more productive in terms of net income.

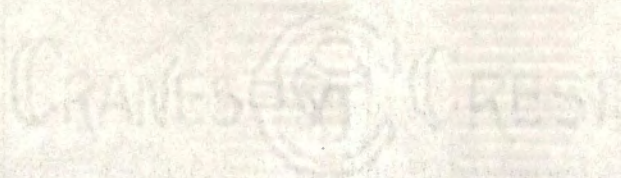
There was a considerable amount of variation in the percentage of swine sold during periods with higher prices among the five farms. Unless the availability of feed or other factors make it more favorable to sell hogs in periods when prices are low, an effort should be made to increase sales during the spring and summer months when prices are normally the highest.

A revolving fund was used by the landlord in financing his share of capital investments and operating expenses. The tenants were furnished capital for living expenses and loaned capital for making investments or paying their share of the operating costs. Because of the level of supervision that is provided the tenants on the farms included in this study, it would seem that it would be easier for the landlord or the tenants to obtain credit than if this supervision were not available. Even if the landlord were not in a position to make loans to tenants on his land, it would seem that a supervised farming program similar to the five farms included in this study would make it easier for the tenants to secure loans from outside sources.

From the results of the operations on these five farms, with various share-lease arrangements, there is no indication that a higher than two-thirds share of income and expenses resulted in more initiative and income. However, there was some indication that a two-thirds share of income and expenses did bring about more initiative than a lower share.

In comparison with the returns in 1956 before the present program was initiated, the operations on these farms in 1957 and 1958 were much more successful for the landlord and tenants. The landlord's share of net income from all five farms totalled \$6,373 in 1957 and \$10,127 in 1958 compared with approximately \$2,400 cash rent paid the landlord by the tenants in 1956. The average income for the tenants above operating expenses totalled \$2,539 in 1957 and about \$3,808 in 1958 compared with an average of \$632 in 1956.

The increase in income to the landlord and these tenants was brought about by careful planning in which basic agronomic, animal science, and economic principles were followed and the necessary capital investments made to develop the farming operations. The employment of a farm supervisor was undoubtedly a major factor in the attainment of the increased income. Therefore, it appears that careful planning and supervision on tenant operated farms pays appreciable returns to both the landlord and tenant for the efforts involved.



BIBLIOGRAPHY

BIBLIOGRAPHY

Dixon, Leon. Characteristics of Population and Tenant Farms on the Ames Plantation. College of Agriculture, The University of Tennessee, 1954. (Unpublished)

Ewing, John A. Planning the Ames Plantation. Harvard University: Cambridge, Massachusetts, 1956.

Hammond, Leigh H. Income Possibilities on Farms in the Cotton Belt of West Tennessee. Thesis, University of Tennessee, 1955.

APPENDIX A



TABLE XXXI

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSE ON FARM NUMBER I
AMES PLANTATION, 1957

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$ 900	\$ 700	\$ 900	\$ 701	\$1,800	\$1,401
Cottonseed	231	96	231	97	462	193
Total Crops	1,131	796	1,131	798	2,262	1,594
Livestock:						
Milk	1,166	1,723	1,167	1,234	2,333	2,467
Calf (1)	--	--	--	--	--	--
Total Livestock	1,166	1,237	1,167	1,238	2,333	2,475
Forestry	--	--	200	--	200	--
Total Cash Income	2,297	2,034	2,378	2,035	4,795	4,069
Inventory Increase	1,431	1,197	1,432	1,322	2,863	2,519
Total Cash Income & Inventory Increase	3,728	3,231	3,930	3,357	7,658	6,588
Cash Expenses:						
Crops:						
Fertiliser	808	555	809	555	1,617	1,110
Seed	339	78	340	78	679	156
Ginning	72	56	72	56	144	112
Lime	--	159	--	--	--	159
Cotton Picking	--	--	--	350	--	350
Poison	48	35	48	36	96	71
Combining and Silage harvesting	165	--	165	--	330	--
Cotton Sale Charges	--	7	--	8	--	15
Baling hay	80	--	80	--	160	--
Total Crop Expenses	1,512	891	1,514	1,082	3,026	1,973
Livestock:						
Swine Purchased	--	120	--	120	--	240
Feed:						
Corn	67	35	68	36	135	71
Cottonseed Meal	36	39	36	40	72	79
Oats	--	49	--	48	--	97
Soybean Meal	--	54	--	53	--	107
Tackage	--	6	--	6	--	12
Other feeds	--	23	--	23	--	46
Total Feed	103	206	104	206	207	412

TABLE XXXI (Continued)

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Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Vet & Medicine	\$ 41	\$ 41	\$ 40	\$ 41	\$ 81	\$ 82
Milk Hauling	139	177	139	177	278	354
Feed Grinding	95	--	95	--	190	--
Other Hauling	--	100	--	9	--	109
Health Dept. Insp.	--	9	--	9	--	18
DHIA	--	20	--	20	--	40
Electricity	--	39	--	36	--	75
Salt & Minerals	3	--	3	--	6	--
Misc. Supplies	40	68	40	59	80	127
Total Livestock	422	780	421	677	842	1,457
Miscellaneous:						
Fuel	200	190	200	189	400	379
Equipment Rental	325	458	325	458	650	916
Equipment Repairs	100	--	100	--	200	--
Electricity	20	--	20	--	40	--
Tires & Tubes	--	37	--	37	--	74
Telephone	--	11	--	21	--	32
Labor	--	58	--	322	--	380
Road & Bldg. Repairs	--	50	--	--	--	50
Other Repairs	--	4	--	4	--	8
Total Miscellaneous	645	808	645	1,031	1,290	1,839
Total Cash Costs	2,579	2,479	2,580	2,790	5,159	5,269
Total Non Cash Costs	291	348	54	14	345	362
Total Cash & Non Cash Costs	2,870	2,872	2,634	2,804	5,504	5,631
Net Cash Income	-282	-444	-82	-756	-364	-1,200
Net Farm Income ^{1/}	858	404	1,296	553	2,154	957

^{1/} Does not take into account the value of family labor.

TABLE XXXII

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSES ON FARM NUMBER I,
AMES PLANTATION, 1958

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$ 900	\$ 921	\$ 900	\$ 921	\$1,800	\$1,842
Cottonseed	138	111	138	112	276	223
Total crops	1,038	1,032	1,038	1,033	2,076	2,065
Livestock & Livestock products						
Milk	4,440	4,278	4,440	4,278	8,880	8,556
Cow	--	53	--	53	--	106
Swine	346	303	347	303	693	606
Total Livestock	4,786	4,634	4,787	4,634	9,573	9,268
Miscellaneous Discounts	--	1	--	1	--	2
Custom Work	--	--	--	90	--	90
Forestry	--	--	200	--	200	--
Total Cash Income	5,823	5,667	6,025	5,758	11,849	11,425
Inventory Increase	236	1,487	112	1,612	348	3,099
Total Cash Income & Inventory Increase	6,060	7,154	6,137	7,370	12,197	14,524
Cash Expenses:						
Crops:						
Fertilizer	940	1,207	939	794	1,879	2,001
Seed	195	337	196	337	391	674
Ginning & Sales Charges	84	82	84	82	168	164
Poison, Processing & Defoliate	48	98	48	97	96	195
Cotton Picking & Other Labor	--	221	225	287	225	508
Combine	137	--	138	--	275	--
Total Crops	1,404	1,945	1,630	1,597	3,034	3,542
Livestock:						
Swine Purchased	--	28	--	29	--	57
Feeds:						
Oats & Hay	--	75	--	75	--	150
Corn	--	105	--	104	--	209
Supplement	--	88	--	88	--	176

TABLE XXXII (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Soybean Meal	\$ --	\$ 127	\$ --	\$ 127	\$ --	\$ 254
Tankage	74	10	74	11	148	21
Cottonseed Meal	252	143	252	142	504	285
Other feeds	--	34	--	35	--	69
Total Feed	326	582	326	583	652	1,165
Vet & Medicine	93	49	92	49	185	98
Hauling	--	19	--	14	--	33
D.H.I.A.	--	71	--	71	--	142
Milk Hauling	721	571	722	572	1,443	1,142
Electricity	--	167	--	166	--	333
Misc. Dairy Supplies	175	242	175	207	350	449
Livestock Sal Expense	--	7	--	6	--	13
Salt & Minerals	20	--	20	--	40	--
Total Livestock	1,335	1,736	1,335	1,697	2,670	3,433
Miscellaneous:						
Tractor Fuel	200	185	200	185	400	370
Equip. Rental	430	363	430	363	860	726
Equip. Repair	88	95	87	80	175	175
Telephone	--	27	--	63	--	90
Road & Bldg. Repairs	--	169	--	--	--	169
Interest	--	--	--	149	--	149
Total Misc.	718	839	717	840	1,435	1,679
Total Cash Cost	3,457	4,520	3,682	4,134	7,139	8,654
Total Non-Cash Costs	373	766	53	41	426	807
Total Cash & Non-Cash Costs	3,830	5,286	3,735	4,175	7,565	9,461
Net Cash Income	2,367	1,148	2,343	1,623	4,710	2,771
Net Farm Income ^{1/}	2,230	1,868	2,402	3,195	4,632	5,063

^{1/} Does not take into account the value of family labor.

TABLE XXXIII

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSE ON FARM NUMBER XI,
AMES PLANTATION, 1957

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$1,500	\$2,262	\$3,000	\$4,524	\$4,500	\$6,786
Cottonseed	200	303	440	605	660	908
Soybeans	250	--	500	--	750	--
Total Crops	1,970	2,565	3,940	5,129	5,910	7,694
Livestock:						
Hogs	--	47	--	93	--	140
Veal	--	--	48	190	48	190
Total Livestock	--	47	48	283	48	330
Forestry	--	--	470	661	470	661
Custom work	--	--	--	220	--	220
Cotton Picking	--	--	--	350	--	350
Total Cash Income	1,970	2,612	4,458	6,643	6,428	9,255
Inventory Increase	373	506	1,697	888	1,070	1,394
Total Cash & Non Cash Income	2,343	3,118	5,155	7,531	7,498	10,649
Cash Expenses:						
Crops:						
Fertilizer	330	280	659	559	989	839
Seed	62	51	123	103	185	154
Ginning	120	131	240	263	360	394
Poison	120	51	340	103	360	154
Cotton Sale Charges	--	27	--	53	--	80
Combine	60	--	120	--	180	--
Total Crops	692	540	1,382	1,081	2,074	1,621
Livestock: Heifer purchase	--	--	60	--	60	--
Swine purchased	53	95	107	190	160	285
Tankage	22	20	44	40	66	60
Vet & Medicine	7	5	13	10	20	15
Hauling & Auction fees	7	1	13	2	20	3
Corn	--	67	--	134	--	201
Soybean Meal	--	19	--	38	--	57
Total Livestock	89	207	237	414	326	621
Miscellaneous:						
Fuel	--	--	300	325	300	325
Freight Expense	--	--	75	112	75	112

TABLE XXXIII (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Equipment Repairs	\$ --	\$ --	\$ 150	\$ 56	\$ 150	\$ 56
Road & Bldg. Repairs	--	15	--	--	--	15
Interest (Carrying charges)	--	--	--	169	--	169
Total Miscellaneous	--	15	525	662	525	677
Total Cash Costs	781	762	2,144	2,157	2,925	2,919
Total Non-Cash Costs	42	12	346	540	388	552
Net Cash Income	1,190	1,850	2,373	4,425	3,563	6,336
Net Farm Income	1,520	2,344	2,665	4,833	4,185	7,177

TABLE XXXIV

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSES ON FARM II, AMES PLANTATION,
1958

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$1,873	\$3,657	\$3,752	\$7,315	\$5,626	\$10,972
Corn	--	197	--	393	--	590
Cottonseed	288	362	576	723	864	1,085
Total Crops:	2,161	4,216	4,328	8,431	6,489	12,647
Livestock:						
Hogs	583	705	1,166	1,317	1,749	2,022
Veal calves	--	--	60	150	60	150
Total Livestock	583	705	1,226	1,467	1,809	2,172
Forestry Work	--	--	500	279	500	279
Custom Work	--	--	400	362	400	362
Total Cash Income	2,744	4,921	6,454	10,539	9,198	15,460
Inventory Increase	212	353	424	710	636	1,063
Total Cash Income & Inventory Increase	2,956	5,274	6,878	11,249	9,834	16,523
Cash Expenses:						
Crops:						
Fertilizer	376	398	752	796	1,128	1,194
Seed	211	110	422	218	633	328
Ginning	175	243	350	485	525	728
Cotton Sales Charges	--	46	--	91	--	137
Poison	90	107	160	413	240	520
Total Crop Expenses	842	904	1,684	2,003	2,526	2,907
Livestock:						
Swine Purchased	--	47	--	95	--	142
Soybean Meal	--	27	--	53	--	80
Tankage	104	28	210	55	314	83
Supplement	--	101	--	203	--	304
Vet & Medicine	19	23	38	47	57	70
Corn	--	51	--	103	--	154
Auction Feed & Hauling	36	28	70	53	106	81
Total Livestock Expense	159	305	318	609	477	914
Miscellaneous:						
Fuel	--	--	400	297	400	297
Repairs & Small Equip.	--	--	150	217	150	217
Interest	--	--	--	203	--	203

TABLE XXXIV (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Road & Bldg. Repairs	\$ --	\$ 298	\$ --	\$ --	\$ --	\$ 298
Supplies	--	23	112	242	112	265
Total Misc.	--	321	662	959	662	1,280
Total Cash Costs	1,001	1,530	2,664	3,571	3,665	5,101
Total Non-Cash Costs	110	101	540	554	650	655
Total Cash & Non-Cash Costs	1,111	1,631	3,204	4,125	4,315	5,756
Net Cash Income	1,743	3,391	3,790	6,969	5,533	10,359
Net Farm Income	1,845	3,643	3,674	7,124	5,519	10,767

TABLE XXIV

A COMPARISON OF THE ESTIMATED AND ACTUAL INCOME AND EXPENSE
ON FARM NUMBER III, AMES PLANTATION, 1957

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$ 975	\$1,240	\$1,950	\$2,402	\$2,925	\$3,606
Cottonseed	150	154	300	307	450	460
Total Crops	1,125	1,358	2,250	2,705	3,375	4,066
Livestock:						
Hogs	184	274	551	821	735	1,095
Veal	--	--	60	124	60	124
Total Livestock	184	274	611	945	795	1,219
Total Cash Income	1,309	1,632	2,861	3,653	4,170	5,285
Inventory Increase	251	306	862	517	1,113	823
Total Cash Income and Inventory Increase	1,560	1,938	3,723	4,170	5,283	6,108
Cash Expenses:						
Crops:						
Cotton Picking	83	--	167	125	250	125
Fertilizer	241	151	483	365	724	516
Seed	55	24	111	56	166	80
Ginning	78	67	156	135	234	202
Poison	52	38	104	75	156	113
Cotton Sales Charges	--	9	--	18	--	27
Lime	--	64	--	--	--	64
Total Crops	509	353	1,021	774	1,530	1,127
Livestock: Heifer Purchase	--	--	120	--	120	--
Swine Purchase	30	42	90	127	120	169
Tankage	63	31	126	95	189	126
Vet & Medicine	11	8	23	24	34	32
Auction Fees & Hauling	7	9	14	28	21	37
Corn	--	22	--	66	--	88
Soybean Meal	--	32	--	96	--	128
Total Livestock	111	144	373	436	484	580
Miscellaneous:						
Fuel	--	--	--	108	--	108
Machinery Repairs	--	--	15	100	15	100
Supplies & Labor	--	23	--	--	--	23
Carrying Charges	--	--	--	66	--	66

TABLE XXXV (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Tractor Custom Work	\$ --	\$ --	\$ 80	\$ --	\$ 80	\$ --
Total Miscellaneous	--	23	95	274	95	297
Total Cash Costs	620	520	1,489	1,484	2,109	2,004
Total Non-Cash Costs	21	41	23	80	44	121
Total Cash & Non Cash Costs	641	561	1,512	1,564	2,153	2,125
Net Cash Income	689	1,112	1,372	2,169	2,061	3,281
Net Farm Income	919	1,377	2,211	2,606	3,130	3,983

TABLE XXXVI

A COMPARISON OF THE TENANT'S AND LANDLORD'S ESTIMATED AND
ACTUAL INCOME AND EXPENSE ON FARM NUMBER III,
AMES PLANTATION, 1958

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$ 938	\$1,661	\$1,875	\$3,324	\$2,813	\$4,985
Cottonseed	144	157	288	314	432	471
Total Crops	1,082	1,818	2,163	3,638	3,245	5,456
Livestock:						
Hogs	338	424	1,015	782	1,353	1,208
Veal	--	--	90	100	90	100
Total Livestock	338	424	1,105	883	1,443	1,308
Custom Work	--	--	100	--	100	--
Forestry Work	--	--	470	361	470	361
Total Cash Income	1,420	2,243	3,838	4,882	5,258	7,125
Inventory Increase	69	208	216	425	285	633
Total Cash Income and Inventory Increase	1,489	2,451	4,054	5,307	5,543	7,758
Cash Expenses						
Crops:						
Fertilizer	208	194	530	498	738	692
Seed	25	47	74	104	99	151
Ginning	88	108	175	217	263	325
Cotton Auction Fees	--	20	--	39	--	59
Cotton Picking	--	--	300	--	300	--
Poison	40	--	80	146	120	146
Total Crop Expense	361	369	1,159	1,004	1,520	1,373
Livestock:						
Swine Purchased	12	38	38	114	50	152
Corn	--	5	--	15	--	20
Tankage	62	19	185	56	247	75
Supplement	--	30	--	90	--	120
Soybean Meal	--	10	--	30	--	40
Vet & Medicine	12	12	33	37	45	49
Hauling	10	9	32	19	42	28
Livestock Auction Fees	10	8	32	13	42	21
Total Livestock Costs	106	131	320	374	426	505
Miscellaneous Costs:						
Fuel	--	--	200	254	200	254
Repairs	--	--	100	11	100	11

TABLE XXXVI (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Supplies	\$ --	\$ 3	\$ --	\$ 16	\$ --	\$ 19
Interest	--	--	--	112	--	112
Total Misc. Costs:	--	3	300	393	300	396
Total Cash Costs	467	503	1,779	1,771	2,246	2,274
Total Non-Cash Costs	107	90	106	80	213	176
Total Cash & Non-Cash Costs	574	599	1,885	1,851	2,459	2,450
Net Cash Income	953	1,740	2,059	3,111	3,012	4,851
Net Farm Income	915	1,852	2,169	3,456	3,084	5,308

TABLE XXXVII

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND ACTUAL
INCOME ON FARM NUMBER IV, AMES PLANTATION, 1957

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income						
Crops:						
Cotton	\$ 772	\$ 693	\$2,318	\$2,080	\$3,090	\$2,773
Cottonseed	118	89	356	269	474	358
Lespedeza	--	--	80	--	80	--
Total Crops	890	782	2,754	2,349	3,644	3,131
Livestock:						
Hogs	122	93	367	278	489	371
Veal	--	--	16	42	16	42
Total Livestock	122	93	383	320	505	413
Custom Work:	--	--	--	118	--	118
Forestry	--	--	324	--	324	--
Total Cash Income	1,012	875	3,461	2,787	4,473	3,662
Inventory Increase	390	250	680	564	1,070	814
Total Cash Income & Inventory Increase	1,402	1,125	4,141	3,351	5,543	4,476
Cash Expenses						
Crops:						
Fertilizer	194	118	581	355	775	473
Seed & Plants	32	15	94	44	126	59
Ginning	62	49	185	145	247	194
Cotton Sales Costs	--	6	--	18	--	24
Poison	48	19	142	58	190	77
Defoliate & Pre-emerge	--	14	--	42	--	56
Cotton Chopping	--	--	--	45	--	45
Cotton Picking	60	--	180	177	240	177
Total Crop Expense	396	221	1,182	884	1,578	1,105
Livestock:						
Swine Purchased	40	79	120	237	160	316
Soybean Meal	--	11	--	34	--	45
Tankage	30	10	91	30	121	40
Vet & Medicine	9	5	26	16	34	21
Corn	--	62	--	--	--	62
Auction & Hauling	4	4	10	8	14	12
Total Livestock	83	171	247	325	329	496
Miscellaneous:						
Fuel	--	--	200	135	200	135

TABLE XXXVII (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Machinery Repairs	\$ --	\$ --	\$ 117	\$ 25	\$ 117	\$ 25
Supplies & Labor	--	15	--	--	--	15
Interest	--	--	--	52	--	52
Total Miscellaneous	--	15	317	212	317	227
Total Cash Costs	479	407	1,746	1,421	2,225	1,828
Total Non-Cash Costs	12	134	195	250	207	394
Total Cash & Non-Cash Costs	491	541	1,941	1,681	2,432	2,222
Net Cash Income	533	468	1,715	1,366	2,249	1,834
Net Farm Income	911	584	2,200	1,670	3,111	2,254

TABLE XXXVIII

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSE ON FARM NUMBER IV,
AMES PLANTATION, 1958

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$ 772	\$ 819	\$2,318	\$2,459	\$3,090	\$3,278
Cottonseed	118	97	356	291	474	388
Total Crops	890	916	2,674	2,750	3,564	3,666
Livestock:						
Hogs	528	203	1,584	607	2,112	810
Veal Calves	--	--	20	35	20	35
Total Livestock	528	203	1,624	642	2,132	845
Forestry Work	--	--	325	--	325	--
Custom Work	--	--	100	--	100	--
Total Cash Income	1,418	1,119	4,703	3,392	6,121	4,511
Inventory Increase	78	- 46	181	-287	259	-333
Total Cash Income and Inventory Increase	1,496	1,073	4,884	3,105	6,380	4,178
Cash Expenses:						
Crops:						
Fertilizer	197	107	522	322	719	429
Seed	50	13	83	39	133	52
Ginning	74	60	214	180	288	240
Cotton Auction Fees	--	9	--	27	--	36
Poison	34	--	98	108	132	108
Defoliate and Pre-emerge	--	14	--	90	--	104
Cotton Picking and other labor	--	--	240	276	240	276
Total Crop Costs	355	203	1,157	1,042	1,513	1,245
Livestock:						
Swine Purchased	13	13	37	37	50	50
Soybean Meal	--	8	--	24	--	32
Tankage	95	5	285	15	380	20
Vet & Medicine	17	7	52	21	69	28
Hauling	16	2	48	7	64	9
Livestock Auction Fees	16	4	48	10	64	14
Total Livestock Costs	157	39	470	114	627	153
Miscellaneous Costs:						
Equipment Repairs	--	--	150	--	150	--

TABLE XXXVIII (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Building Repairs	\$ --	\$ 56	\$ --	\$ --	\$ --	\$ 56
Supplies	--	3	--	12	--	15
Tractor Operating Costs	--	--	200	--	200	--
Interest	--	--	--	32	--	32
Total Misc. Costs	--	59	350	44	350	103
Total Cash Costs	512	301	1,977	1,200	2,489	1,501
Total Non-Cash Costs	23	11	260	260	283	271
Total Cash & Non-Cash Costs	535	312	2,237	1,460	2,772	1,772
Net Cash Income	906	818	2,726	2,192	3,632	3,010
Net Farm Income	961	761	2,647	1,645	3,608	2,406

TABLE XXXIX

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSES ON FARM NUMBER V,
AMES PLANTATION, 1957

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Soybeans	\$ 250	\$ --	\$ 500	\$ --	\$ 750	\$ --
Cotton	1,000	1,233	2,000	2,465	3,000	3,698
Cottonseed	308	160	616	321	924	481
Total Crops	1,558	1,393	3,116	2,786	4,674	4,179
Livestock:						
Hogs	280	383	560	767	840	1,150
Veal Calves	--	--	48	--	48	--
Total Livestock	280	383	608	767	888	1,150
Custom Work	--	--	--	304	--	304
Forestry Work	--	--	720	332	720	332
Total Cash Income	1,838	1,776	4,444	4,189	6,282	5,965
Inventory Increase	373	1,002	513	1,756	886	2,778
Total Cash Income and Inventory Increase	2,211	2,798	4,957	5,945	7,168	8,743
Cash Expenses:						
Crops:						
Fertilizer	274	265	547	539	821	804
Seed	56	43	113	88	169	131
Ginning	80	92	160	183	240	275
Cotton Sale Expense	--	10	--	20	--	30
Combining	50	--	100	--	150	--
Poison	53	43	107	85	160	128
Total Crop Expenses	513	453	1,027	915	1,540	1,368
Livestock:						
Swine Purchased	53	83	107	166	160	249
Corn	213	144	--	--	213	144
Soybean Meal	--	42	--	85	--	127
Tankage	80	42	160	84	240	126
Veterinary and Medicine	13	9	26	18	39	27
Sale Expenses	8	13	16	26	24	39
Miscellaneous	--	--	20	--	20	--
Total Livestock Expense	367	333	329	379	696	712
Miscellaneous:						
Fuel	--	--	300	333	300	333
Equipment Repair	--	--	150	20	150	20

TABLE XXXIX (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Freight Expense	\$ --	\$ --	\$ 75	\$ 106	\$ 75	\$ 106
Supplies & Labor	--	35	--	425	--	460
Interest	--	--	--	160	--	160
Total Miscellaneous:	--	35	525	1,044	525	1,079
Total Cash Costs	880	821	1,881	2,338	2,761	3,159
Total Non-Cash Costs	46	273	352	550	398	823
Total Cash & Non-Cash Costs	926	1,094	2,233	2,888	3,159	3,982
Net Cash Income	958	955	2,563	1,851	3,521	2,806
Net Farm Income	1,285	1,704	2,724	3,057	4,009	4,761

TABLE XL

A COMPARISON OF THE LANDLORD'S AND TENANT'S ESTIMATED AND
ACTUAL INCOME AND EXPENSES ON FARM NUMBER V,
AMES PLANTATION, 1958

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Cash Income:						
Crops:						
Cotton	\$1,250	\$1,241	\$2,500	\$2,483	\$3,750	\$3,724
Cottonseed	192	167	384	335	576	502
Corn	--	698	--	1,393	--	2,091
Soybeans	250	--	500	--	750	--
Total Crops	1,692	2,106	3,384	4,211	5,076	6,317
Livestock:						
Hogs	671	1,106	1,342	2,212	2,013	3,318
Forestry	--	--	720	352	720	352
Custom Work	--	--	1,500	865	500	865
Total Cash Income	2,363	3,212	5,946	7,640	8,309	10,852
Inventory Increase	741	-13	1,483	-27	2,224	-40
Total Cash & Non-Cash						
Income:	3,104	3,199	7,429	7,613	10,533	10,812
Crops:						
Fertilizer	374	291	749	582	1,123	873
Lime	96	137	192	--	288	137
Seed	94	35	190	71	284	106
Ginning	116	96	234	193	350	289
Cotton Sales Charges	--	14	--	28	--	42
Combining Soybeans	50	--	100	--	150	--
Poison	53	--	107	165	160	165
Hay Baling	40	--	80	--	120	--
Picking Cotton	--	--	--	551	--	551
Defoliate & Pre-emerge	--	23	--	107	--	130
Total Crops	823	596	1,652	1,697	2,475	2,293
Livestock:						
Cattle Purchases	533	--	1,067	--	1,600	--
Swine Purchases	--	102	--	204	--	306
Soybean Meal	--	28	--	56	--	84
Tankage	121	32	242	63	363	95
Cottonseed Meal	20	--	40	--	60	--
Supplement	--	149	--	299	--	448
Total Feeds	141	209	282	418	423	627
Salt & Minerals	6	--	19	--	25	--
Veterinary & Medicine	30	31	60	61	90	92
Hauling	27	23	54	43	81	66

TABLE XL (Continued)

Item	Landlord		Tenant		Total	
	Est.	Act.	Est.	Act.	Est.	Act.
Livestock Sale Expense \$	20	\$ 19	\$ 41	\$ 38	\$ 61	\$ 57
Total Livestock	757	384	1,523	764	2,280	1,148
Miscellaneous:						
Equipment Repair	--	--	140	175	140	175
Tractor Fuel	--	--	350	331	350	331
Equipment Rental	--	--	--	--	--	--
Supplies	--	5	--	301	--	306
Interest	--	--	--	177	--	177
Road & Bldg. Repair	--	12	--	--	--	12
Total Miscellaneous	--	17	490	984	490	1,001
Total Cash Costs	1,580	997	3,665	3,445	5,245	4,442
Total Non-Cash Costs	181	199	550	550	731	749
Total Cash & Non-Cash Costs	1,761	1,196	4,215	3,995	5,976	5,191
Net Cash Income	783	2,215	2,281	4,195	3,064	6,410
Net Farm Income	1,343	2,003	3,214	3,618	4,557	5,621



APPENDIX B

LEGEND FOR SOIL MAPS

20 - symbol
B - slope
N - erosion

L - slightly eroded
M - moderately eroded
P - severely eroded

<u>Soil symbol</u>	<u>Class</u>	<u>Soil Mapping Unit</u>
	I	
2		Tigrett silt loam
3		Tigrett fine sandy loam
20AL		Memphis silt loam, level phase
20BL		Memphis silt loam, undulating phase
20BN		Memphis silt loam, eroded undulating phase
22AL		Loring silt loam, level phase
22BN		Loring silt loam, eroded undulating phase
22BL		Loring silt loam, undulating phase
30BN		Lexington silt loam, eroded undulating phase
50BL		Lintonia silt loam, undulating phase
50BN		Lintonia silt loam, eroded undulating phase
	II	
4		Briensburg silt loam
20CN		Memphis silt loam, eroded undulating phase
22AL		Loring silt loam, level phase
22CL		Loring silt loam, rolling phase
22CN		Loring silt loam, eroded rolling phase
30CN		Lexington silt loam, eroded rolling phase
	III	
20CP		Memphis silty clay loam, severely rolling phase
22CP		Loring silty clay loam, severely eroded rolling phase
26AL		Calloway silt loam, level phase
26BN		Calloway silt loam, eroded undulating phase
30CP		Lexington silty clay loam, severely eroded rolling phase
54AL		Oliver silt loam, level phase
	IV	
6		Dyer silt loam
28AL		Henry silt loam
56AL		Calhoun silt loam

<u>Soil symbol</u>	<u>Class</u>	<u>Soil Mapping Unit</u>
	V	
9		Gulley wash
33DL		Ruston fine sandy loam, hilly phase
33DP		Ruston sandy clay loam, severely eroded hilly phase
35C		Gullied land, rolling, erosion stabilized
35D		Gullied land, hilly, erosion stabilized
37C		Gullied land, rolling, erosion stabilized
37D		Gullied land, hilly, erosion active

LEGEND FOR LAND USE MAPS

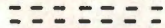
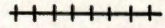
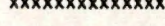
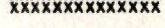
	Paved road
	Dirt road
	Railroad
	Boundry
	Waterways
	Multifloro Rose
	Bicolor
	Building
	Pond

Figure 8. Soil map of Farm I.

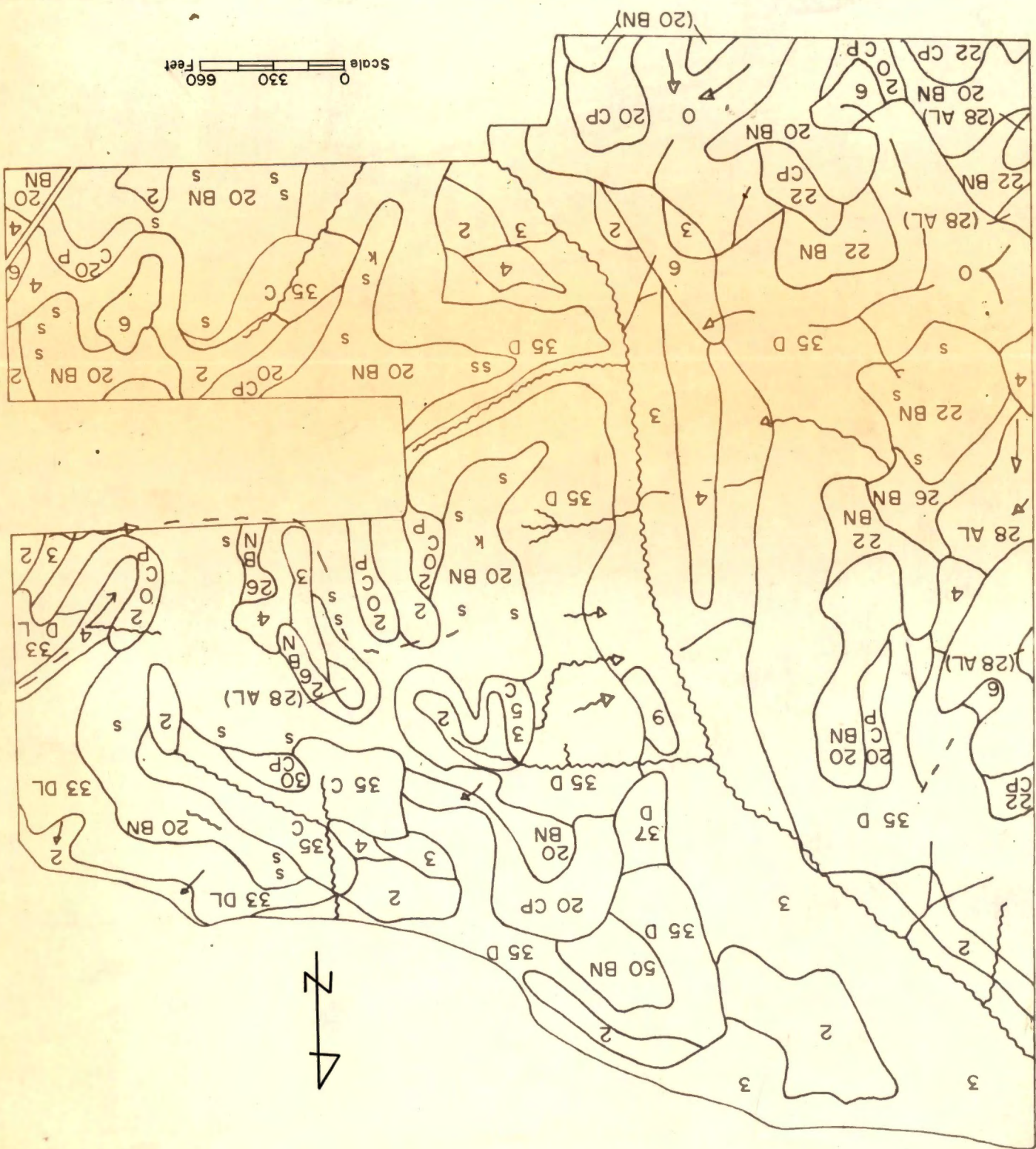
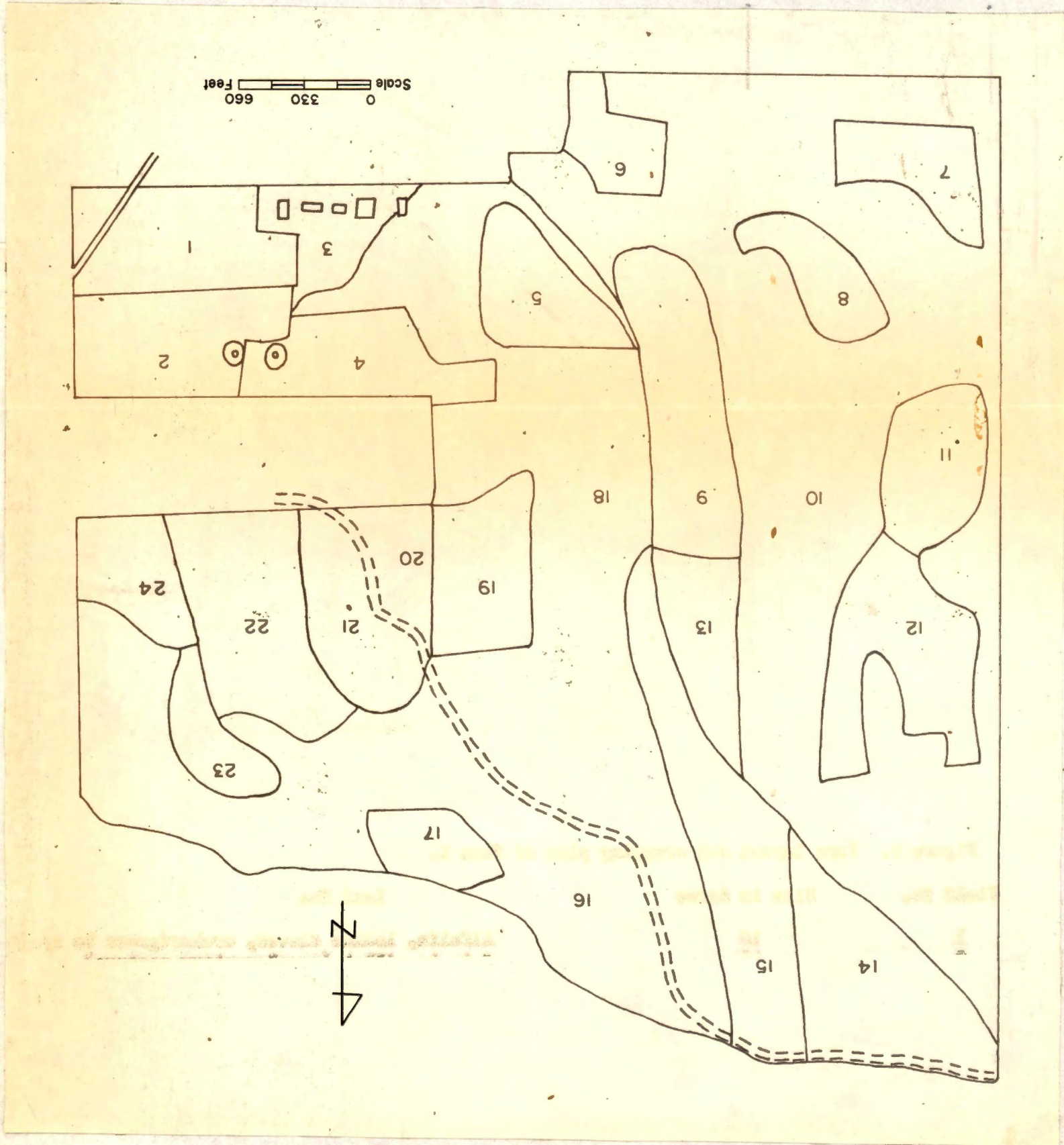
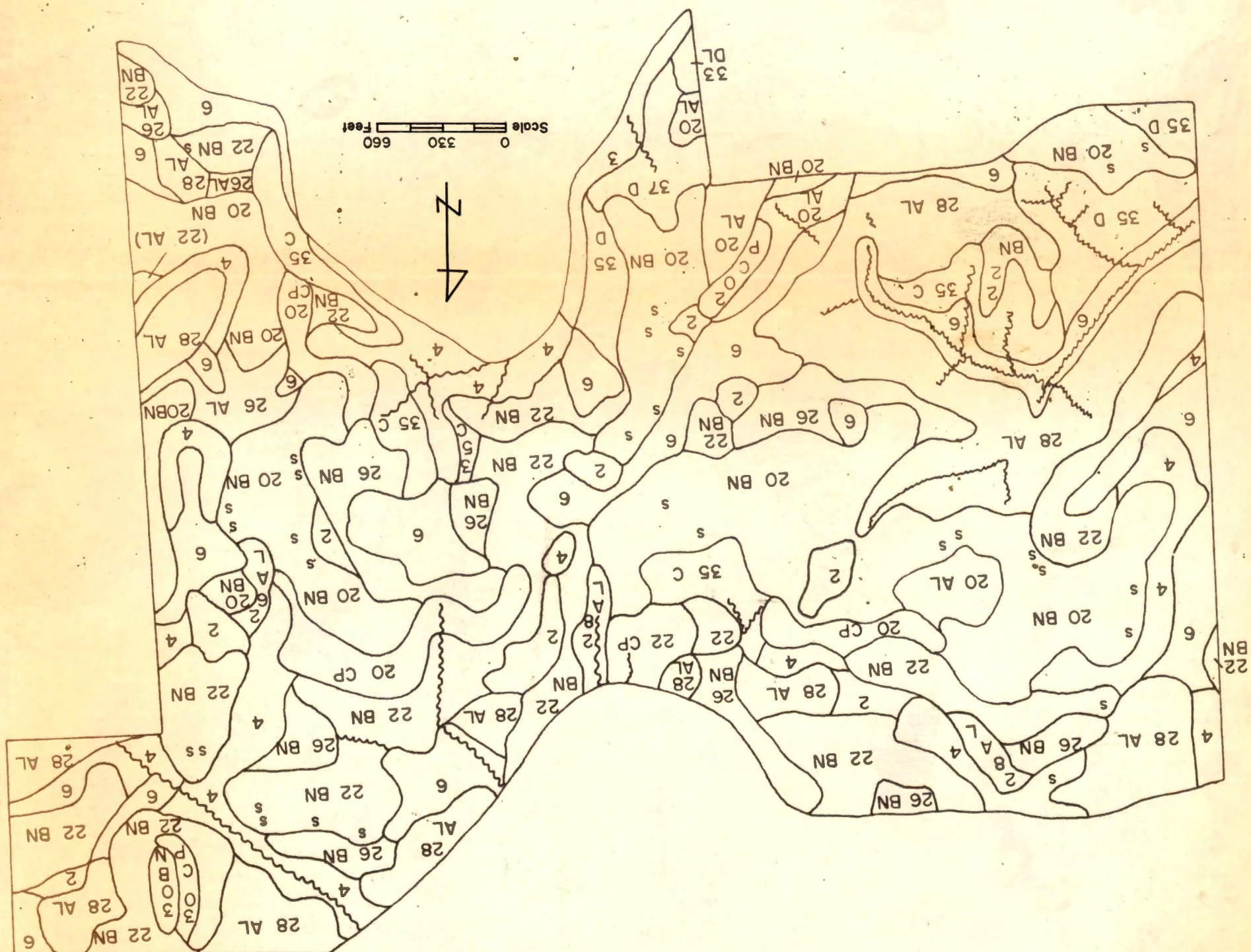


Figure 9. Farm layout and cropping plan of Farm X.



Field No.	Size in Acres	Land Use
1	10	Alfalfa, ladino clover, orchardgrass to ryegrass
2	12	Oats to millet (supplementary pasture)
3	6	House, barn, garden
4	9	Rescue and ladino clover (permanent pasture)
5	6	Oats to millet to wheat
6	5	Ladino clover (hog pasture)
7	5	Oats to oats (supplementary pasture)
8	5	Oats to oats (supplementary pasture)
9	14	Oats to alfalfa, ladino clover, and orchardgrass (permanent pasture)
10	75	Woodland
11	8	Oats to wheat (grain)
12	12	Corn to oats (grain)
13	7	Corn
14	15	Corn silage
15	19	Corn
16	34	Woodland
17	4	Corn
18	35	Woodland
19	8	Millet (supplementary pasture)
20	4	Idle
21	9	Alfalfa, ladino clover (permanent pasture)
22	12	Cotton
23	4	Oats (grain)
24	6	Idle
Total Acres 324		



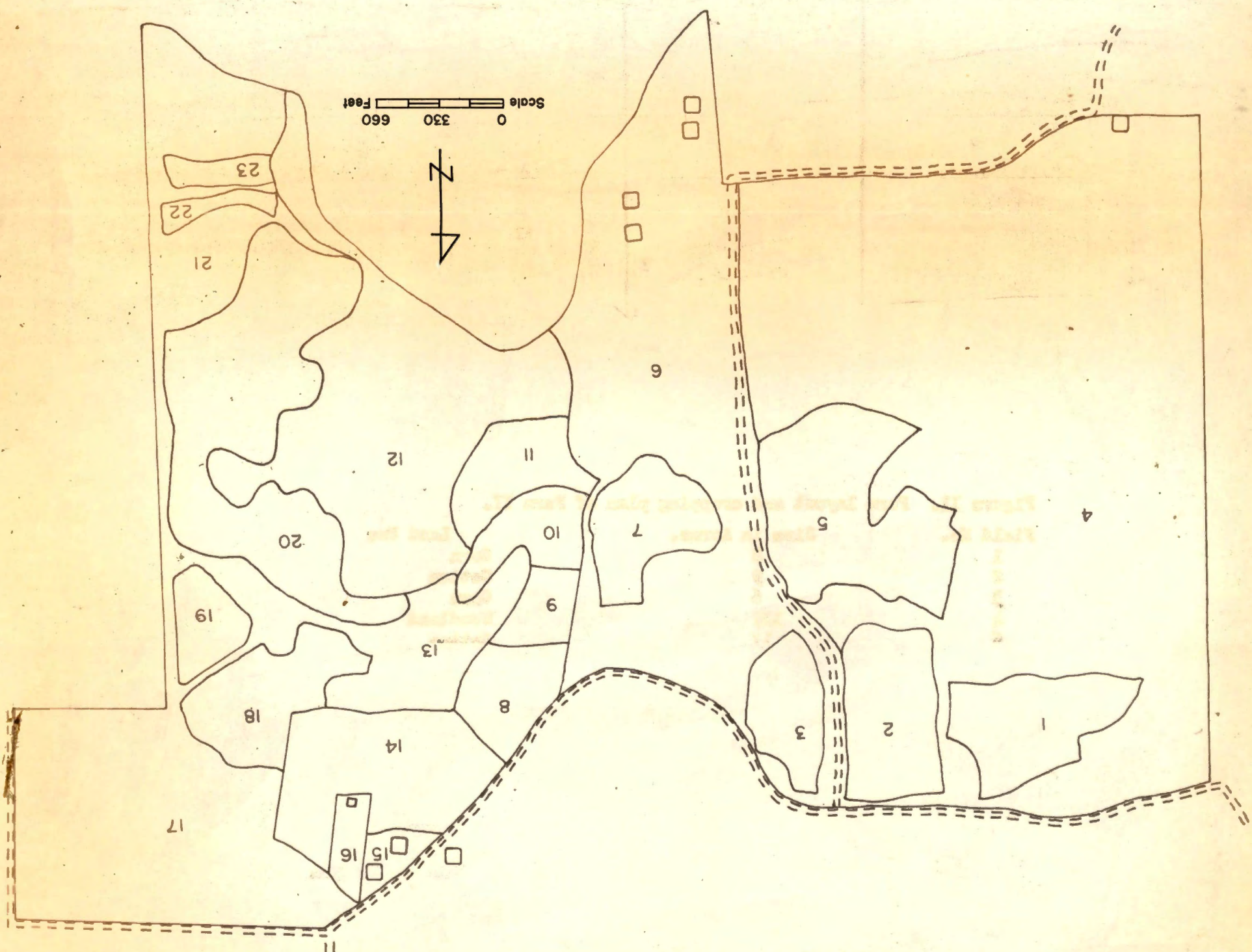


Figure 11. Farm layout and cropping plan of Farm II.

Land Use

Size in Acres.

Field No.

Corn	8
Cotton	9
Corn	6
Woodland	129
Cotton	17
Idle	41
Cotton	8
Strawberries	5
Corn	3
Cotton	6
Woodland	35
Idle	9
Lespedeza (pasture)	12
House, barn	2
Ladino clover (hog pasture)	2
Woodland	32
Corn	8
Corn	4
Corn	24
Idle	12
Soybeans	2
Soybeans	2

Total Acres

384
2
2
12
24
4
8
32
2
2
12
9
35
5
6
3
5
8
41
17
129
6
9
8

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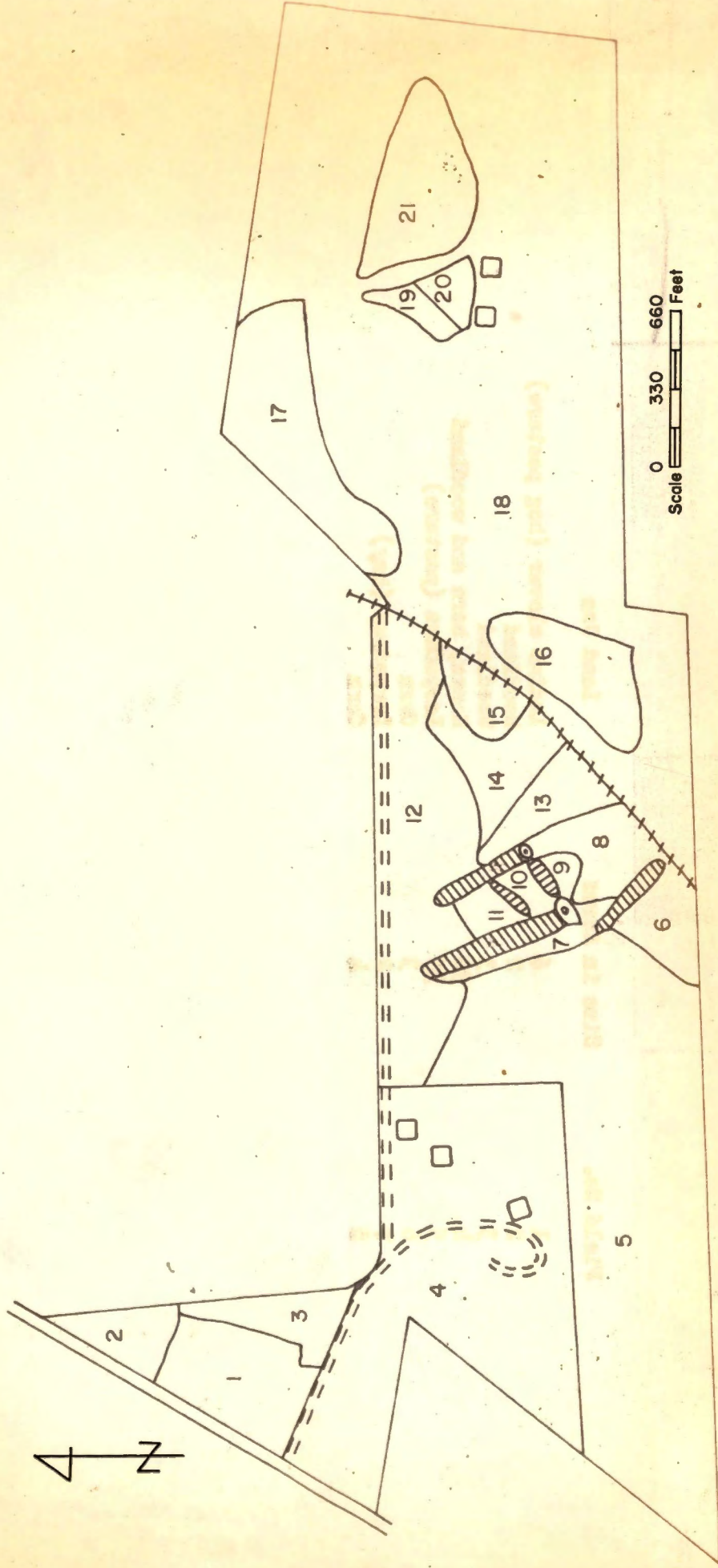


Figure 13. Farm layout and cropping plan of Farm III.

Field No.	Size in Acres	Land Use
1	6	Ladino clover (hog pasture)
2	2	Woodland
3	3	Woodland
4	30	House, barn and woodland
5	35	Lespedeza (pasture)
6	3	Corn
7	2	Lespedeza (hay)
8	4	Corn
9	.5	Lespedeza (hay)
10	.5	Lespedeza (hay)
11	1	Truck crops
12	15	Cotton
13	2	Lespedeza (hay)
14	4	Corn
15	2	Bicolor
16	5	Corn
17	9.5	Corn
18	65	Woodland
19	1	Corn
20	1	Lespedeza (hay)
21	6.5	Corn
Total Acres 198		

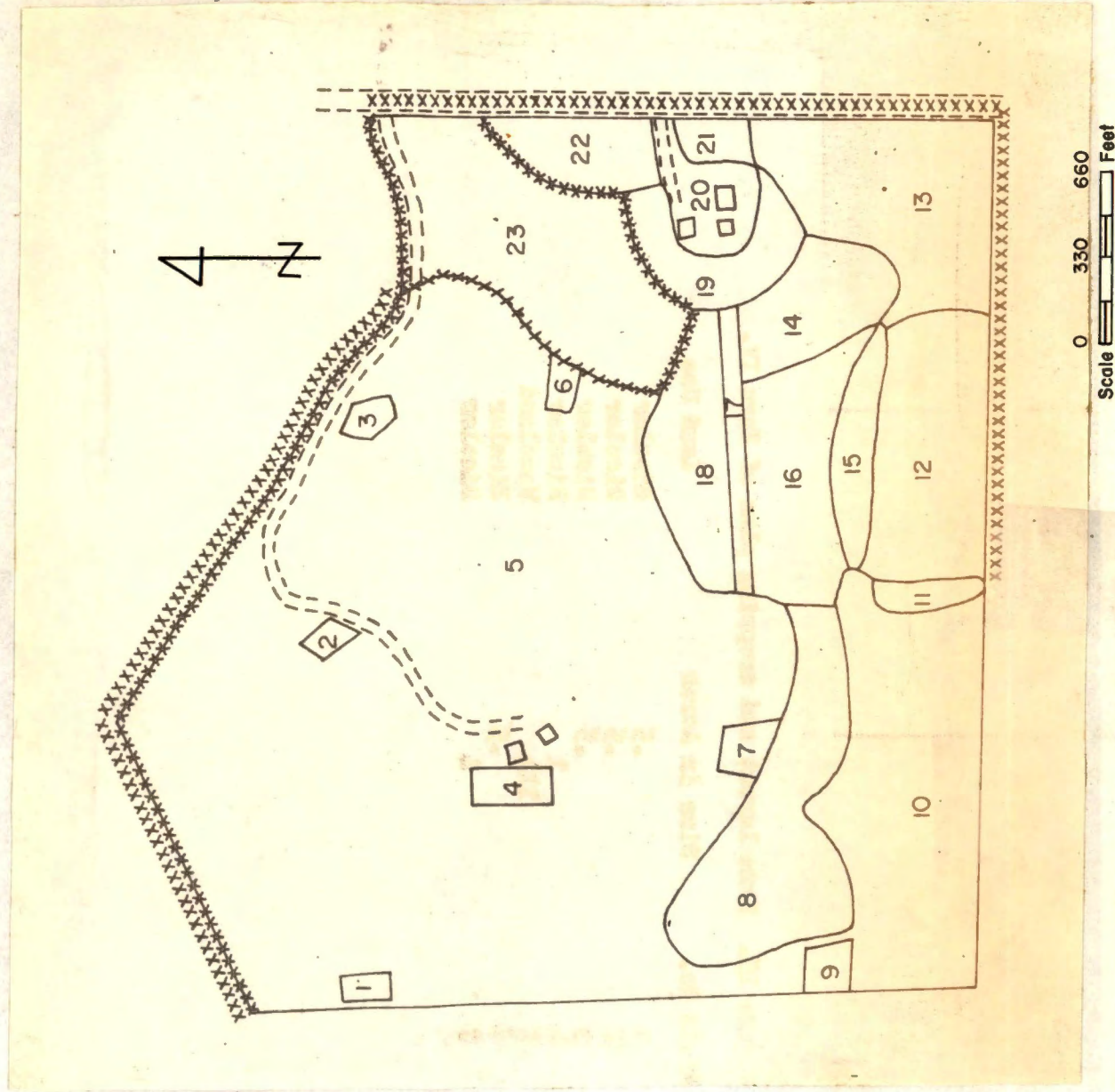


Figure 15. Farm layout and cropping plan of Farm IV.

Field No.	Size in Acres	Land Use
1	.5	Bicolor
2	.5	Bicolor
3	.5	Bicolor
4	1	Bicolor
5	11 1/4	Woodland
6	.5	Bicolor
7	1	Bicolor
8	9	Corn
9	1	Bicolor
10	20	Woodland
11	1	Bicolor
12	9	Cotton
13	9	Corn
14	5	Cotton
15	2	Lespedeza (seeded to prevent erosion)
16	6	Corn
17	1.5	Lespedeza (seeded to prevent erosion)
18	5	Lespedeza (hay)
19	4	Ladino clover (hog pasture)
20	3	House and barn
21	1	Truck crop
22	2.5	Cotton
23	1 1/4	Bermuda grass (permanent pasture)
Total Acres		211

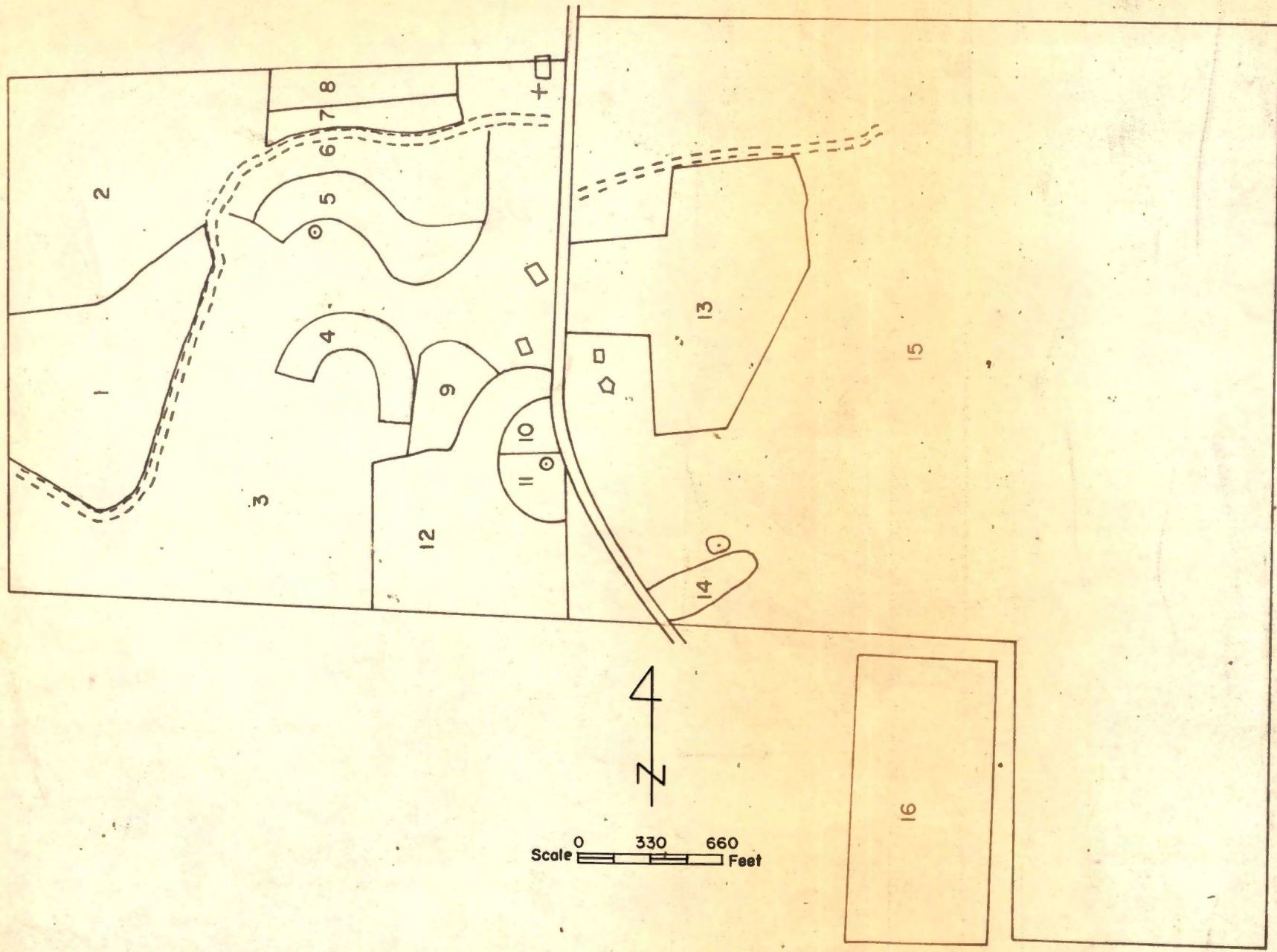


Figure 17. Farm layout and cropping plan of Farm V.

Field No.	Size in Acres	Land Use
1	15	Corn
2	20	Woodland
3	45	Woodland
4	4	Corn
5	5	Corn
6	7	Cotton
7	2	Cotton
8	2	Corn
9	3	Millet
10	1.5	Ladino clover (hog pasture)
11	2.5	Ladino clover (hog pasture)
12	11	Cotton
13	19	Corn
14	2	Corn
15	200	Woodland
16	18	Corn
Total Acres		357