

AN ECONOMIC STUDY OF THE AGRICULTURE OF LEON COUNTY

A THESIS

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AN ECONOMIC STUDY OF THE AGRICULTURE OF LEON COUNTY

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**Submitted to the Faculty of
San Houston State Teachers College
in Partial Fulfillment of the Requirements**

for the Degree

MASTER OF ARTS

By

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CHAPTER I

THE STUDY

The purpose of this study of the agriculture of Leon County is to note the practices followed in the past, appraise the present methods of farming and the crops grown, and to ascertain yields and farm income. It is hoped that an analysis of the information and facts found in this study may be helpful in the establishment of a more permanent and a more prosperous agriculture.

Leon County is highly diversified. It ships a thousand carloads of products annually, and its livestock enterprises are large in comparison with other counties of the State. Yet Leon County does not have the security or the stability of income desired by the farmers. This lack of satisfaction of farmers has been of great concern to bankers, business men, and agricultural agencies. What changes should be made in the agriculture of Leon County that will assure greater satisfaction, greater security, and greater stability? This problem has often been discussed and many questions raised. Among them are these questions:

1. Should family-sized farms be advised?
2. Should new crops be introduced?
3. Should some of the old established enterprises be expanded
and improved practices known be used to increase economy of
production?
4. Should grass farming with fewer and larger farms be the goal?
5. Should larger farms operated by tenants be used?

6. Should large farms operated by managers and hired laborers be the objective?
7. Should smaller, owner-operated farms that produce dairy products, swine, and poultry be advocated?
8. Should small farms specializing in horticultural crops be recommended?
9. Should broiler production, using home grown feed as much as possible, be the aim?

These and other plans have been contemplated and discussed.

Perhaps the most discussed plan has been of an expansion of the production of corn and beef cattle, and improvement in the quality of each.

The facts and statistics that follow may help to solve the problem.

CHAPTER II

THE PHYSICAL DESCRIPTION OF LEON COUNTY

Leon County lies entirely within the post-oak portion of the East Texas timber country. It is partly level table land with hills and narrow valleys lying between the Navasota River and Trinity River.¹²

Leon County is 1,099 square miles in area and contains 703,360 acres of land, 466,004 acres being land in farms. The land in farms is 66.3 per cent of the total land area.¹³

Of the land in farms, open pastures in Leon County comprise 121,573 acres, land used for crops 131,753 acres, other land pastured 66,941 acres, and cropland used only for pasture 54,632 acres.

Timber, chiefly hardwood, covers 256,673 acres. The 1945 census shows all other land in the county to be 10,637 acres.

The Navasota River and Trinity River form the western and eastern boundaries of Leon County. Numerous streams are found in the interior and springs are plentiful. The underground source of water is from the Carrizo Sand and Wilcox Group. Water for irrigation in the Winter Garden area of Texas comes from this formation, and Nacogdoches, Lufkin, and many other cities get their municipal water supplies from it.¹⁰

The soils of Leon County are mostly of light-colored sandy top soils which are generally loose, acid in reaction, and low in organic matter and in some of the essential plant nutrients. The soils are easily cultivated and have a wide range of crop adaptation but are low in productivity. They respond well to methods of improvement and to the application of commercial fertilizers.

The principal soils are fine sandy loam or fine sandy types of the Bowie, Norfolk, Ruston, Kirvin, Nacogdoches, Susquehanna, Lufkin, and related series. They are quite similar in surface appearance but differ greatly in characteristics. This fact is indicated by the color, structure, consistence, and permeability of the subsoil. The soils of the stream bottoms and the prairie are different. They are clay loams of high productivity. The stream bottoms are loams of the Ochlockonee and Bibb series. The prairies are chiefly Wilson clay loams and are excellent producers of cotton.

The Soil Conservation District has been active for several years in this county. This agency has 423 conservation agreements on approximately six hundred farms with a total acreage of 146,614 on June 30, 1951. Some agreements have been made since that date.

The land is classified in the classes shown in Table I. The percentage and acreage figures are not absolutely accurate, but the work unit conservationist, A. W. Dalrymple, of the Soil Conservation Service assures the writer they are as nearly accurate as can be determined. Descriptions of these land classes follow.

Class 1 land is very good land that can be cultivated and has no appreciable loss of soil with ordinary good farming methods. It is nearly level and is easily worked. There is little or no erosion.

Class 2 land is good land that can be cultivated safely with easily applied practices. Some of these measures are contouring, the use of cover crops, and simple water management operations. Rotations and fertilization are necessary. Moderate erosion is common.

Class 3 land is moderately good land that can be cultivated

safely with intense treatments. Terracing and strip cropping are necessary. Water management is required. Common requirements are crop rotation, cover crops, and fertilization. It is subject to moderate to severe erosion.

Class 4 land is land that is suited to limited cultivation. It is fairly good land that is best suited to pasture and hay. It should be cultivated no oftener than one year in six. When plowed, careful erosion prevention methods should be used.

Class 5 land is land that is not suited for cultivation. It should be used for grazing or forestry. It is nearly level, and usually there is little or no erosion. It is too wet or too stony to be cultivated, subject to overflow and needs only good management.

Class 6 land is too steep, eroded, shallow, wet, or dry for cultivation. This class needs careful management.

Class 7 land is suited for grazing or forestry. It needs extreme care to prevent erosion. Usually it cannot be seeded to range or pasture plants.⁸

TABLE I
ACREAGE IN LAND CLASSES UNDER SOIL
CONSERVATION DISTRICT AGREEMENTS

Class	Percent of Total Acres	Number of Acres
1	5	7,330
2	12	17,593
3	35	51,314
4	13	19,059
5	12	17,593
6	11	16,127
7	12	17,593
		146,609

Soil Conservation Service
Centerville, Texas

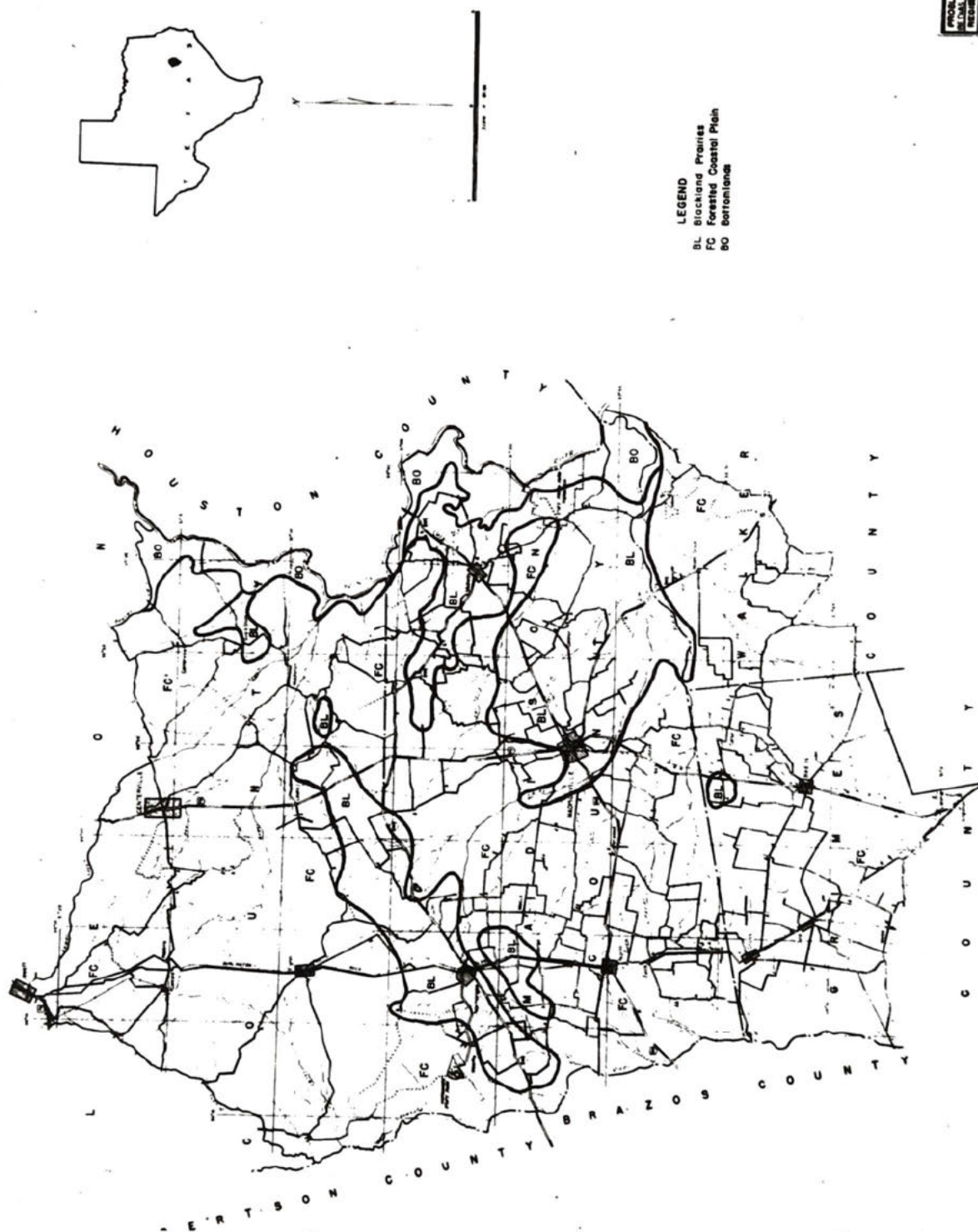
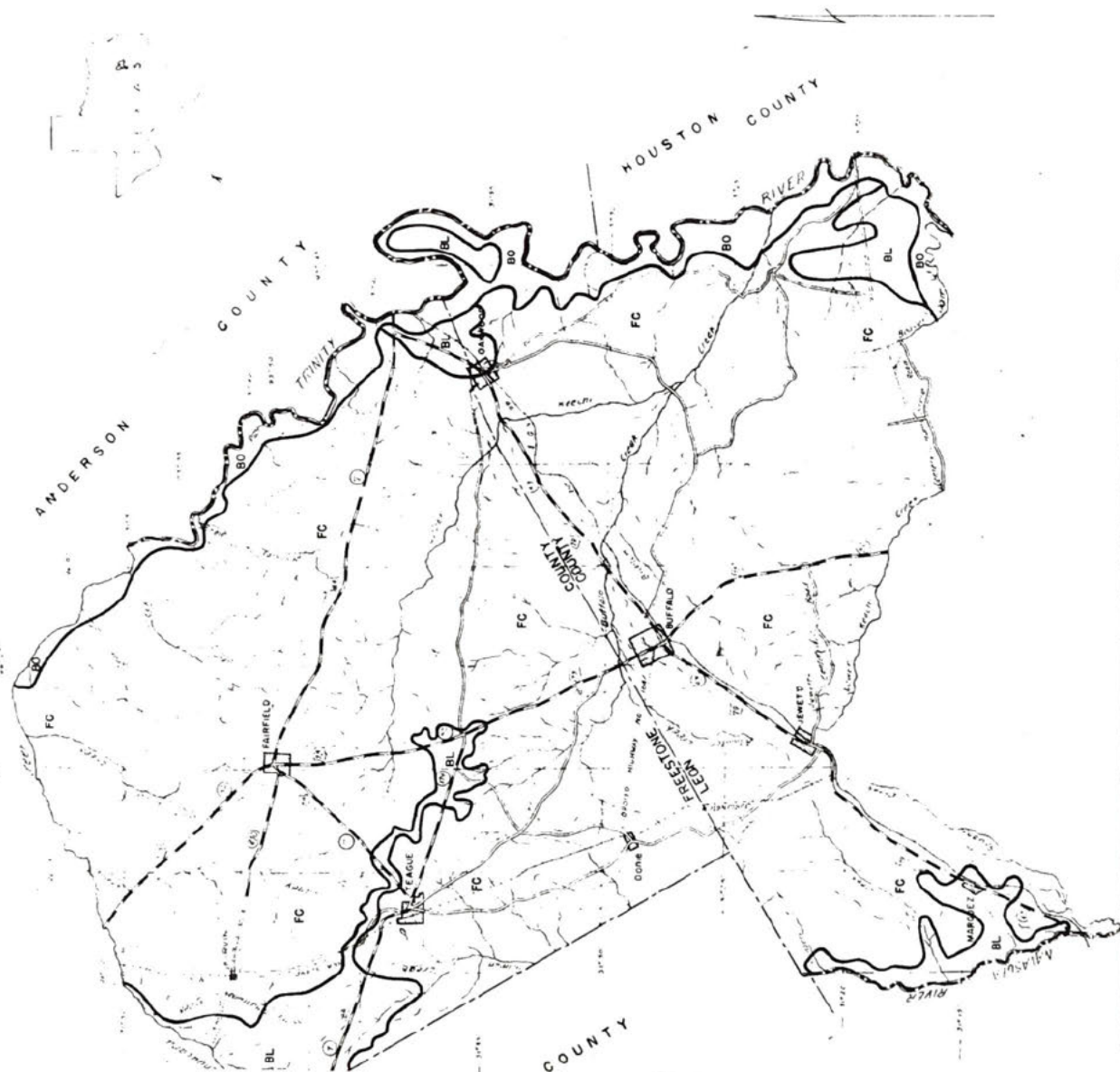


FIGURE 1 -- PROBLEM AREAS
IN BEDIAS CREEK SOIL CONSERVATION DISTRICT



LEGEND
 BL Blackland Prairies
 FC Forsted Coastal Plain
 BO Bottomlands

Scale in Miles
 0 5 10

PROBLEM AREAS IN SOIL CONSERVATION FREESTONE-LEON S.C. DISTRICT		TX - 50	
REGION 4 DIRECTOR'S LOWER MEASURES			
U.S. DEPARTMENT OF AGRICULTURE			
SOIL CONSERVATION SERVICE			
H. H. BENNETT - CHIEF			
REFERENCE 4-P-4853			
Texas State Wide Highway Planning Survey Maps			
CARTOGRAPHIC APPROVAL		TECHNICAL APPROVAL	
COMPILED	TRACED	CHECKED	DATE
P. E. M.			6-9-47
			4-0-4755

FIGURE 2 — PROBLEM AREAS

IN LEON-FREESTONE SOIL CONSERVATION DISTRICT

In reading the description of the various classes of land a person can easily be misled as to the extent of erosion present. As used by the Soil Conservation Service, the term "none to slight erosion" means that as much as twelve and one-half percent of the top soil can be eroded, which means washed or blown away. The term "moderate erosion" means that from twelve and one-half to thirty-five percent is eroded. "Moderately severe" means that from thirty-five to sixty percent is eroded. "Severe" means that up to eighty percent is eroded, and "very severe" means that more than eighty percent of the top soil has been lost.

Table I shows a large part of Leon County farm land to be Class 3 land. The description of Class 3 land states that it is subject to moderate to severe erosion. This means that this land has eroded or may erode as much as eighty percent if proper practices are not established.

The climate of Leon County is favorable for crop production. A fourteen year record shows normal precipitation to be 37.59 inches per year.² It is distributed throughout the year as follows:

January	1.60 inches
February	2.80
March	2.77
April	5.01
May	5.18
June	2.92
July	2.21
August	2.92

September	2.18
October	2.83
November	2.97
December	4.20

A twelve year record of the temperature of Leon County shows the January normal to be 50.6 degrees, and the July normal to be 83.5 degrees. The maximum temperature in this twelve year period was 113 degrees, and the minimum was 8 degrees.

A fourteen year record shows the first killing frost in the Fall to be November 10th, and the last killing frost in the Spring to be March 23rd. The growing season is 232 days.²

TABLE II

AVERAGE TEMPERATURE LEON COUNTY³

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1941		50.0	55.5	68.4	75.6	79.8	84.4	84.2	80.2	74.2	56.3	53.3
1942	47.5	49.3	58.4	66.8	72.2	80.0	81.8	82.7	78.9	75.9	66.2	52.8
1943	50.7	58.3	56.7	69.8	76.0	81.9	83.6	84.8	77.2	66.1	56.6	48.4
1944	47.1	57.0	57.8	66.0	72.4	81.2	84.4	84.9	77.9	68.8	59.2	46.9
1945	47.4	51.0	62.6	64.6	71.7	80.6	82.2	82.8	77.6	66.0	61.4	47.6
1946	46.8	52.0	61.6	69.2	71.8	77.8	82.8	84.4	77.7	70.0	58.0	53.6
1947	Not given											
1948	41.8	51.0	59.5	70.5	76.5	83.6	85.4	86.9	78.3	68.1	58.4	56.2
1949	46.0	55.5	60.4	64.3	77.0	80.9	83.8	81.7	78.9	69.8	60.8	53.9
1950	55.2	55.3	58.2	64.4	75.3	79.6	82.1	83.6	77.6	71.4	57.2	52.2

TABLE III
TOTAL MONTHLY AND ANNUAL PRECIPITATION IN LEON COUNTY³

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1941	2.13	5.31	4.62	1.58	3.02	4.25	2.30	3.35	4.43	7.56	3.54	2.09	44.78
1942	1.18	1.35	1.30	7.27	9.06	4.59	0.27	2.93	4.08	3.02	3.00	2.90	40.95
1943	2.69	0.20	1.88	0.94	5.28	1.24	3.55	0.18	2.35	2.36	3.86	5.15	29.78
1944	8.07	4.78	4.30	0.95	11.12	1.02	1.71	6.82	4.44		8.81	5.48	57.50
1945	2.89	3.05	10.62	5.03	2.92	5.69	4.01	7.95	3.24	5.75	1.00	2.96	55.11
1946	6.16	4.33	5.35	3.57	6.84	4.18	5.33	1.36	1.38	1.91	7.54	3.07	51.03
1947	3.44	1.61	5.22	1.62	10.01	2.28	0.82	3.00	1.60	0.10	3.73	3.59	37.32
1948	3.43	3.48	1.23	5.61	4.83	3.10	1.05	1.55	1.03	0.78	2.69	2.62	31.40
1949	8.12	2.09	3.48	3.36	1.17	4.99	3.17	0.99	3.19	12.20	0.40	4.59	47.75
1950	3.30	4.20	1.85	5.38	3.18	3.19	1.52	0.57	4.30	0.97	1.12	0.18	29.76

TABLE IV

KILLING FROST DATES IN LEON COUNTY³

Year	Last in Spring*	First in Fall**
1941	March 11	November 24
1942	March 29	November 12
1943	March 7	November 9
1944	March 30	November 30
1945	February 23	November 22
1946	February 15	December 2
1947	March 17	November 8
1948	March 3	November 7
1949	February 11	November 1
1950	March 14	November 5

*Last Spring minimum of 32 degrees or below

**First Fall minimum of 32 degrees or below

CHAPTER III

LAND UTILIZATION

A. The Use of Cultivated Land

The number of farms in Leon County is diminishing. The County had 2,760 farms in 1940 and 2,256 farms in 1945. In 1940 the average size of a farm in the county was 161.5 acres, but in 1945 the average size of farms had increased to 206.6 acres.¹³

Before 1934 the crops of the county were almost exclusively cotton, corn, and hay crops. Government control of cotton production and an increased loss of cotton resulting from cotton insects have caused the introduction of horticultural crops. Cowpeas were first planted for commercial purposes in 1935 and have since become one of the major crops of the county. In 1948 the production of watermelons began on a large scale. Tomatoes were first shipped from Normangee and Marquez in 1949.

The tables that follow show the yields of corn and cotton to be extremely low in 1940 and 1945. In those years the average yield of corn in Leon County was 9 bushels per acre. Hybrid corn was unknown to the county and no fertilizer was ever used under the crop. The average yield of cotton was below one-third bale per acre. Almost 34,000 acres were planted to cotton in 1940. Over a period of years government allotments have encouraged planting fewer acres, and in 1945 the farmers of Leon County planted only 17,638 acres of cotton or approximately one-half as much as they planted five years earlier.

Farmers were increasing the acreage of hay and peanuts and decreasing the acreage of cotton, as Table V shows. Hay was needed to

feed increasing numbers of beef cattle, and peanuts proved a profitable crop, government control being the only factor that limited the number of acres planted.

The acreage planted to cowpeas and watermelons has fluctuated from year to year. The number of acres planted is based upon the price received from the product the preceding year.

In 1948 Leon County shipped 269 carloads of watermelons, and in 1949 the county shipped 753 carloads. As rural roads improved marketing by truck increased, and at the present time more watermelons are hauled by truck than by rail. In 1950 Normangee shipped 31 carloads of watermelons, and buyers estimated that 60 percent of the crop or 46 carloads was sold to truck operators.

In 1951 Marquez shipped 66 cars of watermelons and sold four times that amount, or 264 cars, to truck drivers. Frequently cars were not available, but the chief reason that more watermelons were moved by truck is because trucks loaded at the field. The farmer does not have to haul the watermelons to the scales. Scales large enough to accommodate trailer trucks and roads suitable for truck travel have proportionately decreased rail shipments of watermelons. Trucks can be weighed locally in Buffalo, Jewett, Marquez, and Normangee. Table VII shows many truck shipments of watermelons from these towns.

Normangee and Marquez are the only shipping points for tomatoes. This tomato enterprise was started in 1949 and has grown each year. The shipments shown from Marquez are not all the tomatoes sold there. Many boxes are trucked to Franklin to finish cars loading there or trucked direct to commission firms in the North.*

*L. E. Becktold, tomato buyer, Centerville, Texas.

TABLE V
ACREAGE OF CROPS OF LEON COUNTY¹³

Crop	1940	1945
Corn	37,103	23,836
Cotton	33,924	17,638
Hay*	4,365	7,430
Peanuts	3,756	5,005
Watermelons	1,563	1,206

*Includes wild hay and hay from peanuts
picked or threshed for market.

TABLE VI
YIELDS OF CROPS IN LEON COUNTY¹³

Crops	1940	1945
Bushels of Corn	320,291	219,974
Square Bales of Cotton	11,177	5,158
Tons of Hay	5,956	6,228
Pounds of Peanuts	191,112	1,027,996
Pounds of Cowpeas	1,236,720	2,286,480

TABLE VII

CARLOAD SHIPMENTS OF WATERMELONS FROM LEON COUNTY^{6,7}

Shipping Point	1948	1949	1950	1951	Estimated per cent of crops shipped by truck (all years)
Normangee			24	31	60
Flynn	98	151	115	161	10
Marquez	92	241	83	66	80
Jewett		256	131	153	20
Buffalo	79	105	46	65	50
Newby			53		
Total	269	753	452	476	

TABLE VIII

CARLOAD SHIPMENTS OF TOMATOES FROM LEON COUNTY⁷

Shipping Point	1949	1950	1951
Normangee	13	25	39
Marquez	19	10	25
Total	32	35	64

TABLE IX

POUNDS OF COMPEAS SOLD IN LEON COUNTY²

Market	1940	1945	1948	1949	1950	1951
Jenett			2,028,000	960,000	3,556,000	2,525,000
Centerville			1,560,000	1,830,742	1,322,000	180,000
Concord			1,070,000	487,000	518,000	960,000
Marquez			1,518,000	1,600,000	2,970,000	1,172,000
Totals	1,236,720 ³	2,286,180 ³	6,176,000	4,877,742	8,366,000	5,137,000

TABLE X
LIVESTOCK AND LIVESTOCK PRODUCTS MARKETING IN
LEON COUNTY¹³

	Number Sold		Value	
	1940	1945	1940	1945
Cattle and Calves	8,888	13,366)	\$288,227.00*	\$762,341.00*
Hogs and Pigs	14,864	20,009)		
Dairy Products			18,446.00	33,241.00
Poultry and Poultry Products			35,283.00	174,637.00

*Total value of livestock sold, cattle and calves, hogs and pigs.

B. The Use of Pasture Land

Leon County has 121,573 acres of open pasture land, according to the 1945 census. The kinds and numbers of livestock that use this pasture land are as follows:

Horses	2,775
Mules	3,127
Dairy Cattle	3,625
Beef Cattle	31,316
Poultry	87,022
Hogs	24,792

In 1940 Leon County had 6,749 head of horses and mules. In 1945 the number of horses and mules had decreased to 5,902. Workstock is being replaced by tractors. Beef cattle numbers increased from 23,540 in 1940 to 31,316 in 1945. Poultry increased from 69,217 in 1940 to 87,002 in 1945. The county raised 139,350 broilers and fryers in 1940 and 159,323 in 1945.¹³

Livestock production, with the exception of horses and mules, is increasing. With a constantly increasing number of livestock, winter cover crops for grazing should be planted and pasture improvement increased. Whether or not this improvement is being made in Leon County will be shown in the following tables.

TABLE XI

USE OF WINTER LEGUME CROPS IN LEON COUNTY¹

Crops	Lbs. of Seed P.M.A.	Acres Planted	Lbs. of Seed P.M.A.	Acres Planted	Lbs. of Seed P.M.A.	Acres Planted	Lbs. of Seed P.M.A.	Acres Planted
Hairy Vetch	1,175	55	7,300	360	4,900	245	42,800	2,140
Austrian Winter Peas	2,987	120	8,100	324	38,500	1,285	107,750	3,592
Williamette Vetch	35,200	1,760	24,025	1,201	53,700	2,688	7,400	370
Singleton Peas ¹	100	4	1,500	200	0	0	0	1,585
Crimson Clover ²	0	0	0	0	0	0	6,000	8,657
Haban Clover	0	0	400	200	0	0	0	0
Total Acres		1,939		2,285		4,218		16,344

¹The planting of Singleton peas in the Fall of 1950 was from 31,700 pounds of seed brought into the county through the efforts of the personnel of the Soil Conservation Service.

²12,400 pounds of Crimson clover seed were procured through the Soil Conservation Service.



FIGURE 3

CRIMSON CLOVER — 620 ACRES PLANTED IN LEON COUNTY IN 1950



FIGURE 4

WINTER LEGUME CROPS -- 8,457 ACRES PLANTED IN LEON COUNTY IN 1950

TABLE XII

PASTURE AND MEADOW SEEDING IN LEON COUNTY¹⁴

Crops	1947			1948			1949			1950		
	Lbs. Seed	Acres	Lbs. Seed	Acres	Lbs. Seed	Acres	Lbs. Seed	Acres	Lbs. Seed	Acres	Lbs. Seed	Acres
Indigo		1.5										
Hop Clover	1,873	623										
Saricosa Lespedeza			2,100	50	2,280	54	1,200	35				
Koba Lespedeza			94,732	3,161	151,500	5,050	274,580	6,865				
Korean Lespedeza	2,537	130	2,837	130	3,800		0	0				
Total Acres		754.5		3,341		5,104		6,900				

TABLE XIII
APPLICATION OF SUPERPHOSPHATE⁴

Year	Pounds Applied	Acres
1945	658,740	2,177
1946	1,811,233	6,037
1947	652,220	2,608
1948	3,394,675	11,885
1949	3,689,300	12,297
1950	2,190,500	7,301

NOTE: The applications of superphosphate for the years given in the Table were for both fall and spring practices. Some of the superphosphate was used under legume crops and some for pasture and meadows. The use of phosphate has increased over the years. The above amounts are for 20 per cent superphosphate. In 1950 rock phosphate in large quantities was used, making the total amount of phosphate used in 1950 to be greater than the amount used in 1949.

TABLE XIV
APPLICATION OF LIMESTONE¹

Year	Tons Applied	Acres
1945	2,821	2,821
1949	1,320	1,320
1950	4,500	4,500

NOTE: In addition to the limestone spread on the pastures of the county, the Production and Marketing Administration issued purchase orders in 1949 for 110,300 pounds of rock phosphate, and in 1950 for 155,700 pounds of rock phosphate. The farmers of the county were advised to apply rock phosphate at the rate of 1000 pounds per acre. In the two years approximately 275 acres of pasture land received applications of rock phosphate.



FIGURE 5
BRUSH SAW AT WORK -- 1200 ACRES OF LEON COUNTY PASTURE
LAND WAS CLEARED IN 1951

Other pasture improvements have included mowing to control weeds, construction of dams and reservoirs, and destroying noxious plants.

Two hundred thirty farms participated in the practice of mowing pastures in the years 1945, 1946, and 1947.⁴ In those years mowing was a practice on which the Leon County Agricultural Conservation Association approved payments. The two hundred thirty farms mowed a total of 20,038 acres of pasture land. Another practice used in 1945, that is no longer approved by the Leon County Agricultural Conservation Association is noxious plant control. Thirty farmers established this practice on 1,350 acres of pasture land. One hundred sixty three farmers have constructed 172 dams and reservoirs with the help of the Production and Marketing Administration.

The Soil Conservation District owns two tractor mounted brush saws, and there are five other such saws individually owned in the county. There is no way to determine the exact number of acres of pasture land that has been cleared in the county by these saws. The Soil Conservation District saws have operated only in the spring and summer of 1951. In that period they have cleared 1200 acres of pasture land.*

Pasture land of the county is being improved to care for an increasing number of livestock. Farms are becoming fewer in number and larger in size. This change is closely correlated with the population change of the county.

*Information given by Warren E. Robeson, operator brush saws for Soil Conservation Service, Centerville, Texas.

CHAPTER IV

POPULATION CHANGES IN LEON COUNTY

The population of Leon County at the present time is less than it was in 1940. Fewer farmers are cultivating more acres of land, farms have become larger, and cattle have increased in numbers in Leon County.

According to an agricultural economist, this is a healthy condition.¹¹ It means that surplus farm labor has found employment in industrial occupations, that mechanization has replaced horse and mule power, and that farms have tended to become commercialized, replacing the small sized family farms of the past.

In 1930 the population of Leon County was 19,898 people. In 1940, 17,733 people lived in the county, with 8,092 of these living on farms. This trend has continued and the 1950 population is still lower.

This decrease in total population is closely correlated with the decrease in farm population. The change in farm population has been accompanied by a correlated change in ownership and tenancy. School districts have decreased in number. The number of scholastics in the county has also decreased.

The tables that follow show these changes.

TABLE XV
FARM OPERATORS IN LEON COUNTY¹³

	1940	1945
All farm operators	2760	2256
White farm operators	1593	1299
Other farm operators	1167	957
Owner operators	1210	1319
Tenant operators	1495	929

TABLE XVI
SCHOOL DISTRICTS IN LEON COUNTY⁵

Year	Common School District	Independent School District	Total
1940	22	4	26
1945	9	5	14
1950	4	7	11

TABLE XVII
NUMBER OF SCHOLASTICS IN LEON COUNTY⁵

Year	White	Colored	Total
1930			5720
1940			5814
1946	2742	2221	4693
1947	2667	2158	4825
1948	2233	2013	4246
1949	2037	2009	4046
1950	1760	1622	3338
1951	1803	1480	3283

CHAPTER V

NON-AGRICULTURAL RESOURCES AND THEIR RELATION TO AGRICULTURAL RESOURCES

Leon County is a typical East Texas rural county, with but few industries.

Ten sawmills operate in the county. Four of these are located at Centerville, one at Oakwood, and the remaining five are portable mills that move from place to place in the eastern section of the county. A handle factory using ash timber is located at Buffalo. Two large pump stations once operated at Concord, but one has been dismantled, and the other is idle with only three people employed at the present time.

The United States Census of 1947 gives the following statistics as to lumber production in Leon County:

Active sawmills	9
Lumber sawed	7,370,000 board feet
Hardwood	7,244,000 board feet
Softwood	126,000 board feet

The nine establishments in Leon County employ an average of seventy-five employees and have a payroll aggregating \$96,000.00 per year. Farmers and farm workers often find part time employment at the mills and in cutting and hauling logs from the woods. In many instances this additional source of income is a welcome addition to the normal agricultural income.

Oil was discovered in Leon County in 1936. In 1948 the produc-

tion for Leon County was 106,510 barrels, and the total production from discovery to January 1, 1949, has been 745,701 barrels.

Oil companies secure permits from farmers to drill for oil. These permits are called leases and are paid for by the acre. If the company does not drill for oil, the company pays an annual per acre rental on the land. The leases usually are for five, ten, or more years. The landowner receives as royalty one-eighth of all oil produced. Some farmers sell this royalty to speculators. The sale of leases, royalties, and the annual collection of rentals on leases has added much to the purchasing power of the landowners in Leon County.

Minerals, other than oil and gas, found in Leon County are lignite, iron ore, and brick clay. None of these has any commercial value. Two large lignite mines formerly operated in the Jewett area. Large reserves of coal are present, but the mines have been closed for years, as oil and gas are more economical industrial fuels.

Part time employment during the tomato and watermelon seasons also augments the farm income. The labor cost of making boxes, wrapping tomatoes, and packing them in the boxes, nailing the box tops on, and loading the boxed tomatoes on railroad cars is \$180.00 per carload of 750 boxes. In contrast, the labor of loading and stocking a carload of watermelons is \$15.00.*

Considering the small population of the county, the retail business is good. In 1948 retail sales were \$6,100,000.00. Business is stimulated by the ample credit that is available to the inhabitants of the county.

*L. E. Beckett, buyer for the Franklin Produce Company, Center-ville, Texas.

CHAPTER VI

AGRICULTURAL FINANCING IN LEON COUNTY

Leon County has adequate financial institutions to maintain and develop its agricultural activities. There are five banks in the county with total resources of \$4,927,000.00 and total deposits of \$4,618,000.00. These figures were released by the Federal Reserve Bank of Dallas, Texas, relative to the fiscal year closing December 31, 1948. Resources and deposits are greater in 1951 as is shown by Table XVIII in this chapter.

Additional financing in the county is done by the Mexia Production Credit Association, the Farmers Home Administration, and the Madison National Farm and Loan Association, a unit of the Federal Land Bank. In the development of a new enterprise in the county some loans are being made by Sears, Roebuck and Company, and by Arrow Mill and Feed Company. In addition to these sources of credit much financing is done by individuals.

The Leon County loans made by the Mexia Production Credit Association, through their branch office in Centerville, Texas, totaled \$310,000.00 for 1951.

The Farmers Home Administration loaned \$30,325.00 for operation and production purposes in 1951. They made other loans for the purchase of farms totaling \$19,450.00.

The Madison National Farm and Loan Association loaned \$133,000.00 during 1951.

A number of brooder houses are being constructed in Leon County. Sears, Roebuck and Company has financed eight of these houses and has

applications for others. A representative of that company is located permanently in the county for this work. The houses are built on contract at a cost of \$2,250.00 per house. Ten per cent of this amount is collected as a down payment. The remainder is carried at five per cent interest on five year notes. This company has loaned \$16,800.00 in the county recently.

The Arrow Mill and Feed Company finances the purchase of baby chicks and their feeding to market age. This company has financed sixteen houses and approved the application for twelve other houses that are in the process of construction. They place 3,000 chicks in these houses for \$500.00, and supply 25,000 pounds of feed at \$5.20 per 100 pounds. Their loans in the county total \$28,800.00.*

The total amount of agricultural loans in Leon County for 1951 is as follows:

Bank Loans	\$1,061,346.33
Mexia Production Credit Association Loans	310,000.00
Farmers Home Administration Operating Loans	30,325.00
Farmers Home Administration Real Estate Loans	19,450.00
Madison National Farm and Loan Association Loans ..	133,000.00
Sears, Roebuck and Company Loans	16,800.00
Arrow Mill and Feed Company Loans	<u>28,800.00</u>
Total	\$1,599,721.33

*Information supplied by C. L. Cadenhead, Arrow Mill and Feed Company, Buffalo, Texas.

TABLE XVIII

FINANCIAL CONDITION OF LEON COUNTY BANKS*

Bank	Location	Total Resources	Total Deposits	Total Loans	Per cent Agr. Loans	Amount of Agr. Loans
The State Bank of Jewett	Jewett	\$ 916,962.83	\$ 838,157.18	\$ 364,085.22	56	\$ 202,160.80
The Centerville State Bank	Centerville	1,208,760.77	1,106,161.21	251,520.86	90	226,368.77
Citizens State Bank	Buffalo	663,913.43	599,784.75	267,417.68	75	200,563.26
The Oakwood State Bank	Oakwood	763,734.37	674,074.36	234,683.48	75	166,014.00
First National Bank	Normangee	823,931.00	756,035.03	332,799.38	80	266,239.50
		85,377,302.40	83,975,112.53	81,450,508.62		\$1,061,346.33

*Statement of condition June 30, 1951.

CHAPTER VII

THE ROADS OF LEON COUNTY

Leon County probably has as many miles of hard surfaced roads as any county in this section of East Texas.

Federal Highway 75 bisects the county North and South. This road is of concrete construction and passes through Leona, Centerville, and Buffalo. Federal Highway 79 spans the county from the Trinity River to the Navasota River. It also is of concrete construction and passes through Oakwood, Buffalo, Jewett, and Marquez.

State Highway 7, a State road from Crockett to Marlin, is of asphalt construction. It passes through Centerville, Red Land, Robbins, Concord, and Marquez. The King's Highway or Old San Antonio Road gives Normangee a paved outlet East to Highway 75, and a paved road West to Bryan.

Prior to the construction of farm-to-market roads, it was impossible for the people of many communities to market watermelons and peas. The roads were frequently impassible several months of the year. During dry summers it was impossible to transport loads over them because of deep sand. Neither could they be traveled during long periods of rain.

In the past four years more than 100 miles of black-topped farm-to-market roads have been built in the county. These roads are located in every section of the county and have been of great value to farmers. They have greatly stimulated the increased production of local horticultural crops. Trailer trucks can now call at almost every community in the county to load livestock, peas, and watermelons.

A farm-to-market road connects Normangee, Flynn, Robbins, and Jewett. This road follows an abandoned railroad right of way. A farm-to-market road extends from Normangee to the Normangee State Park, and to Venetia where it joins another farm-to-market road from Flynn through Venetia to Marquez and a junction with Highway 79. A farm-to-market road is being built from Centerville to Middleton and Guy Store. At Guy Store it will join a completed road from that point through Center-view and form a junction with Highway 7 between Centerville and Crockett. Roads are now under construction through the Flo, Oakwood, Russell, Nineveh, and Malvern communities. These roads will give the people of these communities an outlet to Federal Highway 75 and to State Highway 7.

The road system of Leon County has greatly increased the production and marketing of farm commodities.

CHAPTER VIII

CONCLUSION

In the beginning of this study a number of questions were raised relative to managerial changes of the agricultural practices in Leon County. Many of these questions have been answered. It has been shown that family sized farms and tenancy are being replaced by larger sized commercial farms. Horses and mules have decreased as power equipment has replaced them. A large acreage of land, formerly planted to feed crops for work animals, has been used for the production of cash crops and for feed for an increasing number of beef cattle.

From the study of data given on acreage, yield, marketing of crops, marketing of livestock and livestock products it is readily seen that Leon County is a highly diversified county. In Chapter III it was shown that the number of farms in Leon County has been decreasing but that the size of the farms has been increasing.

Table VI on page 17 shows an increased production in tons of hay grown, pounds of peanuts marketed, and pounds of cowpeas marketed.

Improved practices are being adopted by the farmers of the county. Statistics from the Production Marketing Administration show both a steady growth in the acreage of winter legumes being grown and an increase in the acreage of meadows and pastures being improved. Table XI, Use of Winter Legume Crops in Leon County, on page 22 shows a phenomenal growth in the annual seeding of hairy vetch. In 1947 Leon County planted 55 acres in this crop, in 1948 the planting was 360 acres, and in 1950 the acreage planted to vetch was 2140. One hundred twenty acres in Leon

County were planted in Austrian winter peas in 1947. Almost three times as many or 324 acres were planted to this crop in 1948. In 1949 the crop had grown to 1285 acres and in 1950 the planting had increased to 3592 acres. Willamette vetch, Singletary peas, Crimson clover, and Hubam clover have also been planted as winter cover crops. The total winter legume crop acreage has had a steady growth as will be seen by examining Table XI. The total acres planted to winter legumes in 1947 was 1939 acres. In 1948 the total was 2285 acres. In 1949 the acreage increased to 4218 acres, and in 1950 the total acreage of winter legumes was 16,344.

Table XII on page 25 shows a great increase in the seeding of Hop clover, sericea, Kobe and Korean lespedezas for pastures and meadows. Production and Marketing Administration statistics as shown by this table show the total number of acres seeded in 1947 to be 754. In 1948 the number of acres seeded was 3341, in 1949 seeding was done on 5704 acres, and in 1950 seeding of pasture and meadow plants was done on 6900 acres.

Rock phosphate, superphosphate and limestone applications have kept pace with pasture and meadow improvement as has been shown in Tables XIII and XIV. Table XIII shows a total of 42,305 acres of Leon County land to have had applications of phosphate in the years 1945 to 1950 inclusive. Table XIV, for the same period of years, shows 8641 acres of land in Leon County to have received applications of limestone.

Much of this improvement has been done as a result of the efforts of the Agricultural Extension Service, the Vocational Agriculture Departments, the Production and Marketing Administration, and the Soil Con-

servation Service.

In spite of this increase in pastures and meadows, feed production is much less than is needed to supply the demands of the county. Feed purchases in Leon County in 1940 were \$78,659.00 and in 1945 they were \$365,246.00.

The 452 carloads of watermelons shipped from Leon County in 1950 were greater than the shipment from any other county in the State. This total represents more than 14 per cent of the 3,044 cars shipped from Texas. Leon County is third in the production of hogs and high in the production of cattle.

The acre yield of cotton is increasing. Much of this increase is due to early season application of insecticides and to the use of more efficient insecticides.* The control program on cotton with its reduced acreage has caused the gins in Buffalo, Jewett, Marquez, Flynn, and Concord to be abandoned.

Leon County is a fairly prosperous county. The resources of its five banks verify this fact. Ample agricultural credit is readily obtained from the banks or other lending agencies in the county.

Mild temperatures, a long growing season, and adequate rainfall assures diversification. On the whole, the farmers of Leon County are more prosperous, have a higher standard of living and are better satisfied than they were a few years ago. They have a more adequate operating capital, better homes, and more conveniences.

From the city limits of Marquez to the city limits of Centerville,

*John B. Williams, County Agent, Centerville, Texas.

fifty-four farm homes can be seen from Highway 7. Twenty-four of these homes have been built recently. Five of the remaining thirty have been remodelled. All but seven have electricity and pressure water systems. Farm homes are being equipped with complete plumbing and the majority have installed butane gas. Financing is less difficult. Power equipment and labor-saving home equipment is found on almost every farm. The farmers and their families have more time for recreation. The drudgery of farm life is less, and farm families are happier, more prosperous, and better satisfied.

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