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**Farmer Adjustments  
to Drouth  
In a Texas County**

**TEXAS A&M UNIVERSITY**

Texas Agricultural Experiment Station

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In Cooperation with the United States Department of Agriculture

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## summary

This report presents information concerning different types of adjustments made by farmers and ranchers in Mills County—an area which underwent continuous and severe drouth conditions lasting from 1950 to 1957. It also includes information concerning what has happened in Mills County since the conclusion of the drouth.

The central core of the study compares data obtained in 1958 from households in three separate census precincts and from former residents of these precincts with agriculture and population census data for earlier years in order to reconstruct adjustments that took place during the drouth years. This information is further supplemented with agricultural and population census data to ascertain what happened in Mills County as a whole and in the study precincts after the drouth.

Adjustments in the Mills County study precincts appeared to occur in a fairly well-defined sequence pattern during the prolonged drouth. For the first 2 or 3 years of drouth, general optimism prevailed, and occupational, migration and farming adjustments were attempted on a relatively minor scale. During the next 2 to 3 years of continuous drouth as optimism began to wane, adjustments were intensified and attempted on a much broader scale. As the drouth continued unbroken, the number and intensity of adjustments appeared to slow down again during the latter years (approximately the sixth to eighth years).

Mills County and the sample precincts experienced relatively heavy population losses during the drouth years. The net loss through outmigration from the county was composed of about two farm people for every one person from the town and open-country nonfarm population.

Accompanying population losses during the drouth were declines in numbers of all age groups except persons 55 years of age or older. Consequently, the proportions of young married couples declined and older persons increased to the extent that an excess of deaths over births has existed in Mills County since 1956. The median age of persons in Mills County in 1960 was 44.6 years as compared to the median age of 27.0 for the Texas population as a whole and 28.9 for the State's rural population.

Farm households in the study precincts declined by 28 percent during the drouth years (1950-58), and farm population declined by 34 percent. Information provided by migrants indicated that the drouth had considerable influence on their decision to move, although advanced age and health were also cited as reasons for making residence shifts and quitting farming. As a result of younger farmers quitting farming

during the drouth years, the proportion of farm household heads under 45 years of age declined sharply in the study precincts for the 8-year period under consideration.

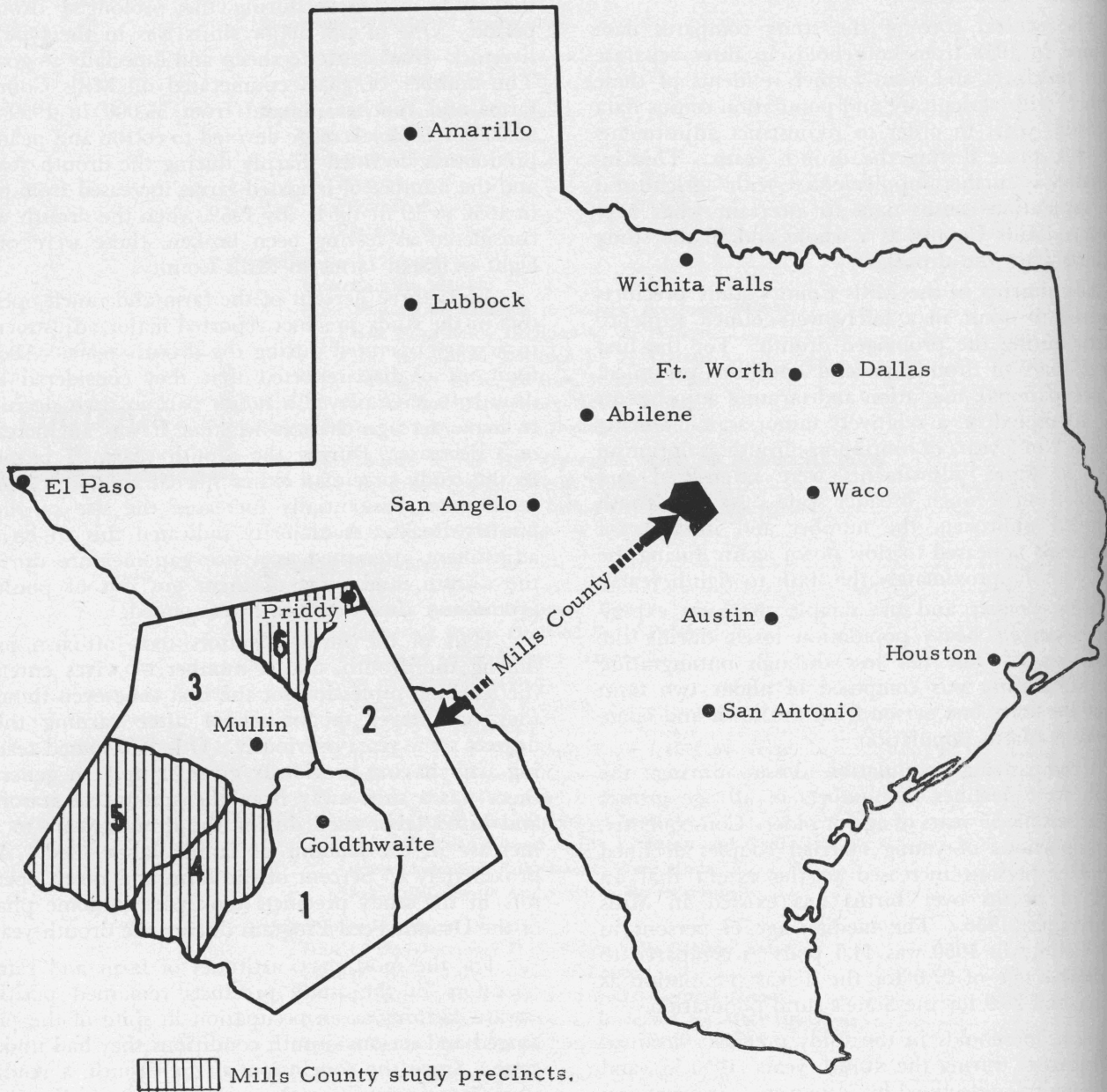
Major adjustments were attempted in different kinds of agricultural operations in Mills County and the study precincts during the prolonged drouth period. One of the major shifts was in the type of livestock—from cattle to sheep and especially to goats. The number of goats enumerated on Mills County farms and ranches jumped from 55,000 in 1950 to 96,000 by 1959. Acreage devoted to cotton and peanut production declined sharply during the drouth years, and the number of irrigated farms increased from one in 1950 to 19 in 1954. By 1959, when the drouth was considered as having been broken, there were only eight irrigated farms in Mills County.

Forty-three percent of the farm and ranch operators in the study precinct reported major adjustments in acreage operated during the drouth years. About four out of five reported that they considered the drouth to have played a major part in their decision to make acreage changes whether it was an increase or a decrease. During the drouth years, 27 farmers in the study precincts either started in poultry production or substantially increased the size of their poultry flocks. A majority indicated this to be an adjustment attempted as a stop-gap measure during the drouth, and most of them got out of poultry production after the drouth was ended.

Half of the farm operators took off-farm jobs during the drouth, and a number of wives entered the teaching profession for the first time even though they had never taught school after earning their degrees some years previously. Others resumed teaching after having previously given it up. In general, there was a shift away from the amount of seasonal and hired labor used during the drouth years to an increase in the amount of family labor used. Approximately 85 percent of the farm and ranch operators in the study precincts took part in some phase of the Drouth Feed Program during the drouth years.

For the most part, attitudes of farm and ranch operators in the study precincts remained positive toward farming as an occupation in spite of the prolonged and serious drouth conditions they had undergone. Since the conclusion of the drouth, a readily apparent change has taken place in the enthusiasm and optimistic outlook of Mills County farmers and ranchers. At the same time, it may be viewed as a "guarded" type of optimism, because Mills County residents fully realize that a drouth can occur at any given time.

**figure 1**



Mills County—located near the geographic center of Texas

# Farmer Adjustments to Drouth in a Texas County

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THE SERIOUS DROUTH which occurred over widespread areas of Texas and other states of the Southwest during the 1950's attracted nation-wide attention. Although certain areas of Texas are subject to recurrent moisture deficiencies, it was considered by many observers as the worst on record in the State. Bonnen and Ward stated in Texas Agricultural Experiment Station Bulletin 801, *Some Economic Effects of Drouth on Ranch Resources*, that the drouth which began in the fall and winter of 1950 was reportedly the worst within the memory of persons living at that time. In comparison it was felt that the one of 1934 was of relatively short duration and the one of 1917 and 1918 did not equal this one in intensity.

Most of the public attention during the recent period of drouth was focused on economic adversities and on programs designed to alleviate one or another aspect of livestock feed shortages resulting from prolonged rainfall shortage conditions. Less attention was given to personal and family adjustments and changes in farming necessitated by drouth conditions.

Farm people in areas which underwent serious drouth during the 1950's were forced to make various types of adjustments to meet the adverse conditions. Some shifted to irrigation where topography and underground water supply permitted. Others added a nonfarm occupational pursuit and reduced their farming operations while remaining on farms. Still others gave up farming entirely and moved away to towns and cities.

Although there has been speculation concerning the adjustments that farm people make during a prolonged drouth period, little formal research has been conducted to verify what actually happens. As a part of their continuing cooperative research programs in farm population studies, the Farm Population Branch of the Economic Research Service (formerly part of the Agricultural Marketing Service) and the Texas Agricultural Experiment Station undertook a field study in 1958 to determine and evaluate adjustments that farm people attempted during a prolonged drouth period.

## **Purpose of Study**

The overall purpose of the study was to provide information which would be useful in planning future programs for drouth areas. More specifically, the

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following three major objectives of the cooperative research project were set up. (1) Determine the farm population changes in a selected area of Texas during a period of serious and prolonged drouth. This included changes in total numbers and in composition of persons living on farms. (2) Determine the occupational and financial adjustments of persons who remained on farms through a prolonged drouth period and evaluate their future intentions with regard to farming and migration. (3) Estimate the extent of migration to and from farms and determine the demographic characteristics of those who moved, the motivating forces which resulted in decisions to migrate, the influence of drouth conditions upon these decisions, attitudes of migrants toward farming as an occupation and the influence of the drouth upon these attitudes.

## **Scope and Method of Study**

### **Area of Study**

For purposes of this research project, geographic coverage of the drouth areas in Texas was not practical. It was decided, therefore, that the research would be carried out on an intensive basis in a more restricted area. The area of study was then determined by the following criteria.

(1) It was to be an area in which continuous severe drouth conditions had lasted for a period of years extending from 1950 to 1957. (2) The area would encompass either an entire county or a smaller subdivision of a county (referred to as justice or commissioners' precincts in Texas) for which certain detailed data for 1950 and 1954 could be obtained from the Bureau of the Census.

After careful examination of available rainfall data and information on related aspects of the drouth, Mills County, located very near the geographical center of the State, was selected as the study area (Figure 1). Mills County had suffered intensive and prolonged drouth conditions from 1950 to 1957. In fact, rainfall records obtained at the Mills County Soil Conservation Office indicated that for every year during 1946-56, rainfall was below the 55-year annual average of 27 inches (Figure 2). Although in 1957 total rainfall was above the 55-year annual average, most of it occurred during the latter part of the year when it was too late for a successful 1957 crop year. Reliable sources in the county reported that the rainfall received in Mills County in the years under consideration in this study was largely ineffective for agricultural purposes. Sometimes a fairly large quan-

Inches of Rainfall

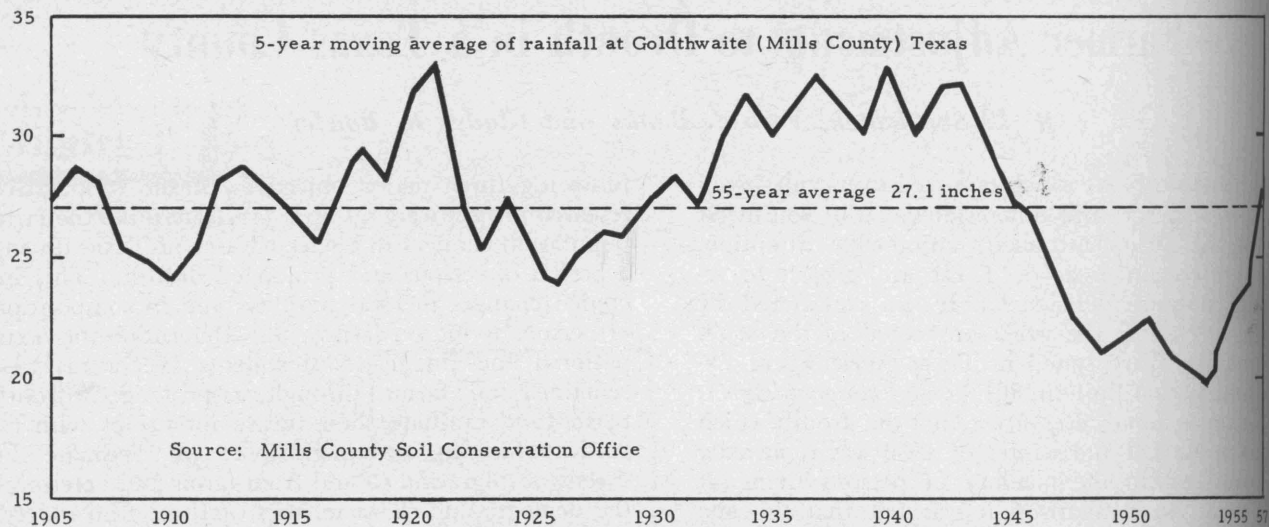


Figure 2. The extreme nature of the most recent drouth in Mills County is shown by means of a 5-year moving average of rainfall in Goldthwaite. Note also that it was preceded by a period of favorable moisture conditions of greater length.

tity fell in a short period, but excessive run-off occurred on the comparatively barren soil. Its seasonal distribution was also poor in terms of what was needed for grass and crop production (Figure 3).

Although official data indicated a shortage of rainfall beginning in 1946, (Figure 2) its seasonal distribution was apparently favorable for farming and ranching conditions for a few years. About half of the farm and ranch operators interviewed indicated that in their judgment the drouth began around 1950. Better than three out of four stated they first began to experience seriously low crop yields and began intensive livestock feeding programs between 1950-53. Consequently, for the purposes of this study, the drouth was assumed to have begun in 1950.

Relative to the second criterion of selection, the six justice precincts of Mills County had been used by the Bureau of the Census in both 1950 and 1954 for collecting population and agricultural data. Rather distinct differences in types of agricultural operations are found among the precincts. Three precincts which encompass the main types of agriculture in the county were selected for study. They were Precinct 6 in the northeastern corner and Precincts 4 and 5 which are contiguous in the southwestern corner of the county (Figure 4). The distance between the extreme ends of the survey precincts is about 45 air miles, but the connecting highway is 60 miles long because of its winding nature. Agriculture in Precinct 6, which is located in the Grand Prairie type-of-farming area, is both farming and ranching. Precincts 4 and 5, (in the West Cross Timbers type-of-farming area) are almost entirely ranching, with much larger units on the average than in Precinct 6.

Another important consideration in the selection of Mills County as the study area was the relative absence of opportunity for farmers to obtain income from other sources to supplement their farm earnings. Gas and oil resources were relatively absent in the county, and consequently farm operators received little income from the leasing of land for these purposes. There was little income from deer leases, which is enjoyed by ranchers in nearby counties. Brownwood, with fewer than 17,000 residents in 1960, is the largest population center located in a contiguous county. Thus, the county's economy was to a large extent dependent on agriculture.

### Method of Study

The central core of this study compares data obtained in 1958 (through personal interviews with a member of each household in the survey area) with agricultural and population census data for earlier dates in order to reconstruct some of the changes that took place during the drouth years. This information is further supplemented with 1959 Census of Agriculture and 1960 Census of Population data to ascertain what changes took place after the conclusion of the drouth. Other information on changes was obtained directly from the respondents. In addition, data were obtained from or about persons who had formerly lived in the study area. The number of each of the several types of households or individuals surveyed is shown in Table 1.

Although the original project design did not call for a restudy of the sample precincts after the end of the drouth period, the area was revisited on several occasions. Observations made at the time of revisit are discussed in the final section of this report.



Figure 3. Range land in the drought area so denuded of grass and vegetation and with such hard crust that moisture would not penetrate soil. Note small pits in the background made by special machinery in order to catch water so it will penetrate into the soil. (Photo furnished by Soil Conservation Service.)

## Background Information

### Mills County<sup>1</sup>

This county is only a few miles east of the geographic center of Texas, lying at the junction of the Grand Prairie and Edwards Plateau regions. It is bounded by Comanche and Brown Counties on the north, Hamilton County on the east, Lampasas and San Saba Counties on the west and south. The county is approximately 34 miles in length and 22 miles in width and covers an area of 734 square miles.

The range in elevation is from 1,200 to 1,750 feet. A range of hills, known locally as Cowhouse Mountains, extends through the county from southeast to northwest. The topography consists of table lands, fertile valleys, hills, ridges and a few peaks.

<sup>1</sup>This section is largely quoted or adapted from *A Situational Analysis of the Effects of Drought as a Disaster on the Mobility of a Selected Rural-Farm Population* by Clarence W. Ketch, a dissertation in Sociology, Louisiana State University, January 1961; *A No Man's Land Becomes a County* by Flora Gatlin Bowles, Mills County Historical Society, The Steck Company, Austin, Texas; and *Types of Farming in Texas* by C. A. Bonnen, Texas Agricultural Experiment Station Bulletin 964, October 1960.

The climate of Mills County is mild and dry, with extremes in temperature being rare. The summers are warm and dry. The average summer temperature ranges from 82 to 90° F., and the average temperature in January is between 45 and 60°. Snow seldom falls in the county, and when it does it remains only a few hours. The mean average temperature is 65°.

Mills County had a population of 5,999 in 1950. Since there are no towns of 2,500 or larger in Mills County, its entire population is classified as rural. The town of Goldthwaite, with 1,566 people in 1950, located near the center of the county, is the county

TABLE 1. NUMBER OF VARIOUS TYPES OF HOUSEHOLDS OR INDIVIDUALS SURVEYED, MILLS COUNTY DROUTH STUDY, 1958

Type	Number
Farm operators currently operating in sample precincts	214
Nonoperator households on farms in sample precincts	27
Former operators of farm land in sample precincts who are no longer farming	20
Individual member(s) migrating from households of farm operators	69



Figure 4. Mesquite tree with healthy mistletoe growth. Farmers in Mills County gather mistletoe and sell it to a packing plant in Goldthwaite. Over 100,000 pounds of mistletoe are shipped from Mills County annually, amounting to an income of approximately \$50,000 to the county.

seat and largest population center. The second largest town and only other incorporated place is Mullin, which had a population of 326 in 1950. Neither of these two places was located in the sample areas studied. Neither town had industry which might offer employment to the surrounding farm population. The nearest thing to an industry was the seasonal gathering of mistletoe, which was processed and packaged in Goldthwaite (Figure 5). Mostly women are employed for mistletoe packaging for a short season prior to Christmas.

According to the 1960 Census there are only four nonwhite persons in Mills County. A majority of the whites are of Anglo and German derivation with approximately 1 percent being of Spanish extraction.

The Mills County economy is largely dependent on agriculture. The types of agriculture and changes



Figure 5. Typical rolling terrain and scrub vegetation in the range country of Precincts 4 and 5. Picture made in 1961 after conclusion of drouth. (Photo furnished by Soil Conservation Service.)

occurring between 1950-58 are discussed at length in a section to follow.

In the following analyses, population information relates to January 1958, the time of the survey, and current production information relates to the year 1957.

### *The Study Precincts*

**PRECINCT 4**—This precinct is located along the southern border in the southwest corner of the county and has no town or village. The residents are chiefly of English and Irish stock. At the time of the survey, there were 48 households on the 39 farms and ranches. These farms had a median size of 320 acres with nine being 1,000 or more acres.

At the beginning of the drouth, Precinct 4 had a grade school, but by 1958 the school children were being transported to the consolidated school in Goldthwaite. Three churches were holding services in 1950, but all were abandoned by 1958. The church buildings were still standing at the time of the survey, but no use was being made of them.

The soils range from sands to sandy loams in Precinct 4 and are erosive and low in natural fertility. The surface ranges from gently rolling to rolling with rough stony lands that are not amenable to the plow. Native vegetation consists mainly of bunch grasses, scrub oak trees and brush. Some cactus is found being burned off and fed to cattle and sheep and goats in all three precincts during the drouth.

A limited amount of irrigation was being done in Precinct 4 by pumping water from the Colorado River. Some vegetables, small grains and hay crops are grown in the southern portion of the precinct, but most of it is devoted to raising sheep, goats and cattle.

**PRECINCT 5**—Precinct 5 is located in the extreme southwest corner of the county where the terrain is more rough and stony than in Precinct 4 (Figure 6). The soils are sandy, and this precinct has the appearance of being more arid than the central and north-eastern parts of the county. It has a fairly extensive growth of bushes and trees, most of which are stunted and scrubby. Cactus grows well, and native bunch grass is found throughout the precinct but is generally sparse, with patches of bare ground showing between the clumps.

Precinct 5 had 64 households on 56 farms and ranches at the time of the field survey. Farms in the precinct had a median size of 792 acres. One-fourth were dryland farms, and the remainder were ranches or else combined farming and ranching. There is no water for irrigation purposes other than the Colorado River, which is the southern boundary of the precinct. Farming is devoted almost entirely to small grains, sorghums and other hay crops. The ranching is mainly sheep and goats, with a few cattle.



The trend in this precinct has been a shift from cattle to sheep and goats, with the change being accelerated during the drouth years.

No town or village is located in Precinct 5. When the drouth began, it had three active churches. By the time of the survey in 1958 all had closed, although the buildings remained. The residents of Precinct 5 who attended church, generally went to Brownwood, the county seat of adjoining Brown County, and to Goldthwaite or Mullin, in Mills County.

A grade school had operated in the precinct when the drouth began but had been abandoned prior to 1958. All school children were being transported out of the district to schools either at Mullin or Brownwood.

PRECINCT 6—Priddy, the third largest place in the county, is the community center of Precinct 6 and is located 15 miles from Goldthwaite. It had an estimated population of 180 in 1950 and was the only village or town in the entire study area. The residents of Precinct 6 are chiefly of German stock.

At the time of the survey in 1958, Priddy had 44 residences and several stores (including two grocery stores, both combined with filling stations, and a drugstore with the post office in one corner of it). It also had one cafe-and-hotel combination where the general public was served meals and older persons were housed, a bank, a lumberyard, a feed mill, an automobile repair garage, a general blacksmith shop, a telephone office and several other miscellaneous buildings.

Eleven of the families residing in Priddy operated farms in the precinct in which it is located. The other residents were mostly retired persons or operators of the places of business mentioned previously.

There were 129 residences in the precinct outside the Priddy area, located on 119 farms and ranches. The farms were mainly devoted to the production of beef cattle, sheep and poultry. Some cotton was raised but the bulk of the cultivated land was planted in small grains, corn, cane and sorghums for hay. Most of the land of the precinct was in grazing pasture. Pecans grew abundantly on native trees along the creeks, and a few farms had pecan orchards. The farms in Precinct 6 had a median size of 254 acres, with only five being as large as 1,000 acres. The soils are primarily clays and clay loams which range from productive bottomlands to gently rolling prairie and shallow stony soils. They are more fertile than those in Precincts 4 and 5 and produce well if moisture and other weather conditions are favorable (Figure 7). There are no natural bodies of water within the precincts although several creeks flow through it periodically.

At the time of the field study, Priddy had a 12-grade consolidated school which served all of Precinct 6 and portions of adjoining precincts. There



Figure 6. More of the land in Precinct 6 can be cultivated than in Precincts 4 and 5. (Photo furnished by Soil Conservation Service.)

were a Baptist church and a Lutheran church in Priddy, both of which had resident ministers. The Church of Christ denomination had two congregations in the precinct outside of Priddy, but no resident ministers.

## Population Changes

Previous research conducted on a cooperative basis by the Farm Population Branch of U. S. Department of Agriculture and the Texas Agricultural Experiment Station indicated that between 1950-57, declines in farm population were associated with seriousness of drouth conditions. In connection with an annual survey of the farm population made by these two agencies, estimates were made in 1957 of farm population changes for different sections of Texas classified on the basis of seriousness of drouth conditions during 1950-57. The findings indicated that between 1950-57, in areas of serious and prolonged drouth, farm population declined by about

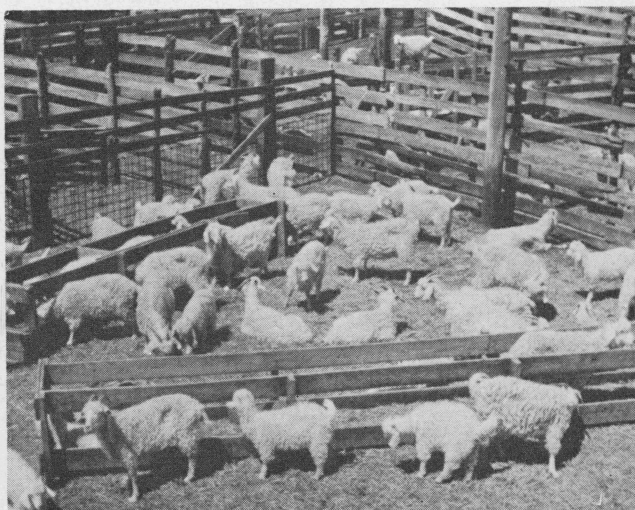


Figure 7. Goats in Mills County Commission Company pens. During the drouth years goat raising increased in Mills County.

35 percent. In areas of intermediate seriousness, the decline was 27 percent; and where conditions were least serious, the decline was only 15 percent. During this same period, the farm population in the United States as a whole declined about 23 percent. Thus, in the State as a whole, the farm population declined at a faster rate in areas of serious drouth such as Mills County and at slower rates in areas where drouth was less serious.

The objective of this section is to describe the overall population changes that have occurred in Mills County and the sample precincts brought about through migration and natural increase.

### *Mills County, 1950-60*

While the sample data provide information for analyzing changes between 1950-58 for the precincts studied, it is not possible to up-date these population data in detail by utilizing information from the 1960 Census of Population. This is because the Bureau of Census made some changes in boundaries of the minor civil divisions for the latest decennial census. Nevertheless, some information from the 1950 and 1960 Censuses of Population and other sources at the county and minor civil division level can be utilized to indicate changes over a longer period than that covered by use of the survey data.

Mills is one of about 1,500 counties in the United States and of 143 counties in Texas that experienced population loss between 1950-60. The total population (farm and nonfarm) declined by about one-fourth between 1950-60 from 5,999 to 4,467, a net decline of 25.5 percent. Of Texas counties losing population, the average decline was 13.3 percent. Thus, the net loss of population in Mills County was considerably greater than that of other counties with which it shared the experience of a declining population. Loss was general throughout the county. Even Goldthwaite, the largest center in the county, had a net loss; about 183 fewer persons lived there in 1960 than in 1950.

About 680 births and 533 deaths were recorded in Mills County in the decade. Thus, net out-

migration must have amounted to almost 1,700 persons in the 10-year period,<sup>2</sup> or a rate of 28.0 percent of the 1950 population.

Census figures for the minor civil divisions in Mills County in 1950 and the new census divisions in 1960 indicate that population decline (and therefore outmigration) was heaviest in Precinct 2 (the star precinct in 1960) and lightest in the town of Goldthwaite. This is illustrative of the generally heavier decline that occurred throughout the country as a whole in the farming areas of rural counties.

From percentage changes in numbers of people living on farms and in the towns in 1950 and 1960, based on census materials, it appears that the net loss through outmigration was composed of about two farm people for every one person from the towns and open country nonfarm population. In the decade, the farm population of Mills County dropped from 3,387 to 2,314 while the nonfarm population decreased less, from 2,612 to 2,153. Movement of farm persons to towns within the county, on which there are no data, and a change in definition of farm population make it impossible to determine precisely the ratio of farm to nonfarm outmigrants. Nevertheless, a decline of 1,073 and 459 in farm population and nonfarm population, respectively, indicates the approximate relationship of the residential composition of the outmigrants from the county.

In the previous decade, 1940-50, the farm population of Mills County decreased and the nonfarm population increased slightly, for a total loss of population of about 1,952 for the county. Mills County population showed an even larger outmigration rate in this earlier decade than between 1950-60. The first half of the 1940-50 decade was characterized by more than normal rainfall, but wartime conditions precipitated heavy outmigration. In the latter half, drouth appeared to become an important factor in outmigration.

Accompanying the overall changes in Mills County have been striking changes in the age structure of population. These changes are apparent on examination of data by age groups for the years 1940, 1950 and 1960, Table 2. Declines in all age groups, except among persons 55 years old and over, are immediately apparent. Changes that were beginning to be evidenced by 1950 were much more exaggerated by 1960. The 1960 population was characterized by a high proportion of older persons, small numbers of young adults and declining numbers of young children.

In Mills County, the median age of the population in 1940 was almost the same as the median for Texas as a whole (27.7 years compared with 26.8).

<sup>2</sup>U. S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 7, "Components of Population Change, 1950 to 1960 for Counties, State Economic Areas, and Economic Subregions," Washington, D. C., November 1962.

TABLE 2. POPULATION BY AGE, MILLS COUNTY, 1960, 1950 AND 1940

Age	Number			Percentage distribution		
	1960	1950	1940	1960	1950	1940
Total	4,467	5,999	7,951	100.0	100.0	100.0
Under 5 years	278	544	694	6.2	9.1	8.7
5-14 years	704	993	1,563	15.8	16.5	19.7
15-24 years	442	768	1,396	9.9	12.8	17.6
25-34 years	318	652	1,147	7.1	10.9	14.4
35-44 years	516	853	958	11.6	14.2	12.0
45-54 years	664	760	889	14.9	12.7	11.2
55-64 years	627	670	664	14.0	11.2	8.4
65 years and over	918	759	640	20.5	12.6	8.0

Source: 1960, 1950 and 1940 Censuses of Population.

Between 1940-60 the population of Mills County declined by 44 percent as the result of the heavy out-migration previously mentioned. In consequence, the median age in the county increased to 44.6 years by 1960 and was 17.6 years higher than the Texas average, which rose only to 27.0 years. Furthermore, while the median age in Mills County increased by 9.1 years during the decade in which the drouth occurred (1950-60), it declined by almost 1 year in Texas as a whole and increased by only 1.6 years in the rural population of the State.

The number of young adults in the county 20-29 years old is now less than half as large as the number of persons 50-59 years and is even considerably smaller than the number of elderly people 70-79 years old. With the loss of potential or actual young parents, the number of children under 5 years of age in Mills County is now smaller than the group 5-9 years old, which in turn is smaller than the number 10-14. This is a new situation for Mills County.

In the most advanced cases of prolonged or severe outmigration such as experienced by Mills County, the distortion of the age structure has increased the proportion of older persons and decreased the proportion of young married couples to the point where deaths now exceed births. A sprinkling of such counties began to appear in the mid and late 1950's in states like Missouri, Kansas, Kentucky, Oklahoma and Texas. The abnormal excess of deaths over births is caused by the odd age structure of the counties rather than by low fertility or high mortality.

Numbers of births and deaths occurring in Mills County in the 1960-61 period indicate that in 1956 the number of deaths exceeded the number of births for the first time and has continued to do so in the years following. Vital statistics information provided by the State Department of Health indicated 53 births and 64 deaths in Mills County in 1961.

By using 1950 and 1960 Census data, and a reliable estimating procedure,<sup>3</sup> it is possible to determine the age and sex composition of the net loss through migration which occurred during the 1950 decade. Application of this procedure clearly illustrates that migration was heaviest among persons who reached their 20th to 29th birthdays during the decade. Thus, persons in these age groups were very much reduced in 1960 as were the age group 30-34, from migration occurring in this and previous decades. This accounts for the great decline in numbers of births and consequent small numbers of young children in the Mills County population in 1960.

### Farm Population Changes in Sample Precincts, 1950-58

One objective of the Mills County study was to obtain information on the farm population in the survey area at the time of the study in January 1958,

in order to analyze changes which had occurred since 1950. A total of 214 farm operators was interviewed, covering the operators of all land in operation in the sample precincts. Of the 214 farm operators, 181 lived on farms in the sample precincts. Of the others, ten lived in Priddy, and 23 did not live in the sample precincts. Of the latter group, 9 lived in the towns of Brownwood (6), Goldthwaite (2) and Comanche (1), and 14 lived on farms which were outside the precincts, although they also operated some land which was located in the sample precincts. In addition to the 181 operators living on farms in the sample precincts, households are also included of persons who did not operate farmland themselves but had some other connection with the farm on which they lived. Among this latter group were included farm laborers, landlords and relatives of operators. Therefore, the farm population in 1958 consisted of the members of the farm-resident farm-operator households and the members of the farm-resident nonoperator households. Thus it is comparable in definition to the farm population of the 1950 Census of Population with which comparisons were made.

The farm operators who did not live on farms in the precinct are not a part of the analysis to follow in this section, but they are included in the analyses in later sections which relate to farming adjustments to drouth conditions.

In the text to follow, Precincts 4, 5 and 6 are sometimes individually compared; in other instances comparisons are made between Precinct 6 and Precincts 4 and 5 combined. As previously indicated, Precincts 4 and 5 are relatively similar in topography, soils, types of agriculture and in certain cultural factors such as nationality background of residents.

**FARM HOUSEHOLDS DECLINED BY 28 PERCENT —** Between 1950-58 the number of farm households decreased 28 percent, Table 3. Substantial declines occurred in households of all sizes except two-person

<sup>3</sup>C. Horace Hamilton, and F. M. Henderson, "Use of Survival Rate Method in Measuring Net Migration," *Journal of American Statistical Association*, 39:197-206, 1944.

**TABLE 3. SIZE OF FARM HOUSEHOLDS, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950**

Size of household	Number		Percentage change 1950-58	Percentage distribution	
	1958	1950		1958	1950
All households	208	289	-28.0	100.0	100.0
1 person	12	20	-40.0	5.8	6.9
2 persons	88	83	6.0	42.3	28.7
3 persons	36	75	-52.0	17.3	26.0
4 persons	36	53	-32.1	17.3	18.4
5 or 6 persons	27	42	-35.7	13.0	14.5
7 or more	9	16	-43.8	4.3	5.5
Average size of households	3.15	3.44			

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

TABLE 4. AGE OF FARM HOUSEHOLD HEADS, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950

Age	Number		Percent	
	1958	1950	1958	1950
Total	208	289	100.0	100.0
Under 45 years	63	122	30.2	42.2
Under 25	3	15	1.4	5.2
25-34	18	34	8.7	11.8
35-44	42	73	20.1	25.2
45 and over	145	167	69.8	57.8
45-54	64	77	30.8	26.6
55-64	48	42	23.1	14.5
65 and over	33	48	15.9	16.7
Median age	51.4	48.0		

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

households which increased a small amount. As a result, two-person households comprised over 42 percent of the total in 1958 compared with 29 percent in 1950. Chiefly through the migration of young adult members from farm households during the period, the average size of household was reduced from 3.44 in 1950 to 3.15 in 1958.

At the time of the survey the 27 nonoperator farm households comprised 14 percent of the area's farm households and population. A third of the heads of these other dwelling units on farms was engaged in nonfarm wage work, while 22 percent were farm wage workers and 30 percent were retired.

The average age of heads of farm households was higher in 1958 than in 1950; the median ages for the 2 years were 51.4 and 48.0, respectively, Table 4.

Heads of farm households in Precinct 6 are largely of German descent, while those of Precinct 4 and 5 are mainly of Anglo-Saxon extraction. Ethnic background appeared to have a bearing on attitudes toward farming. Briefly, when questioned about their general attitudes toward farming and ranching, interviews with persons of German descent in Precinct 6 revealed that they have always viewed farming very favorably as an occupation. Most of them indicated that they would not desire to change from farming or ranching under almost any circumstances. In a number of cases, farmers of German background

TABLE 5. PERSONS LIVING ON FARMS, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950

Precinct	Farm population		Change, 1950-58	
	1958	1950	Number	Percentage
Total	655	995	-340	-34.2
4 and 5	279	526	-247	-47.0
6	376	469	-93	-19.8

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

stated that no matter how serious the drouth became, they intended to stay in farming and ranching in preference to doing something else. Interviews with the farmers of Anglo-Saxon extraction in Precincts 4 and 5 revealed that they were generally more favorable toward giving up farming if other occupational alternatives were available. Thus, the difference in ethnic background may have had some influence on different migration patterns noted in the study precincts.

FARM POPULATION DECLINED BY 34 PERCENT—The number of persons living on farms in the sample precincts dropped sharply during the drouth years. Between 1950-58 the farm population declined by 340 persons, or a decrease of 34 percent, Table 5.

This reduction in farm population in Mills County sample precincts was of greater magnitude than the decline experienced in Texas' farm population as a whole and in the United States. For the same period of years the farm population in Texas decreased 31 percent and that of the Nation 26 percent.

A breakdown of the figures by study precincts reveals some differences in farm population losses occurring within the study area. The smallest proportionate decline occurred in Precinct 6, where the farm population decreased approximately one-fifth between 1950-58. Precincts 4 and 5 experienced considerably higher declines during the same period, 55 and 39 percent, respectively. Combined Precincts 4 and 5 had a 47 percent decline. Cultural factors, soil types and consequently the type of farming carried on in the precincts largely account for these differences.

MEDIAN AGE INCREASED FROM 31 TO 39 YEARS—The age distribution of the farm population in Mills County study precincts changed considerably during the drouth years, with an increase in proportions of older persons and decrease in proportions of young adults and young children. As a result of these changes, the median age of the farm residents increased about 8 years between 1950 and 1958, from 31 in 1950 to 39 years in 1958. Persons under 45 made up only 58 percent of the total population in 1958, whereas they had been nearly 70 percent in 1950, Table 6. Migration was highly selective of young adults thus removing much of the area's family-raising potential during the drouth years.

For the farm population as a whole, males continued to outnumber females in 1958 as they did in 1950. For both dates, the number of men per 100 women—the sex ratio—was 111. The greatest excess of males over females occurred at ages 20-24 years in both 1950 and 1958, with ratios for these years of 148 and 160, respectively. Although sex ratios are normally high among farm people at this age level, the sex ratio in the study precincts is much higher than normal. The explanation for this is that girls

migrated from farms in the study area at a faster rate and at younger ages than boys. This is evidenced by the fact that the sex ratio is much lower among the 15-19-year-old group than at the 20-24-age level. The only age groups in which females outnumbered males were the 55-64 in 1950 and 35-44 in 1958. In both instances the margin of excess of females was relatively small.

An examination of the sex ratios by sample precincts reveals distinct differences. In Precincts 4 and 5 combined males outnumbered females in 1958 but not to as great an extent as in 1950. In these precincts sex ratios were 110 in 1950 and 107 in 1958. In Precinct 6, males outnumbered females by a greater extent in 1958 than in 1950; the sex ratio rose from 111 to 115 during this period.

Table 7 shows the age structure of the population in Mills County sample precincts in 1940, 1950 and 1958. It may be noted that there are fewer people in all age groups, indicating that outmigration from the farm population had been heavy during the drouth years.

It is estimated that there was a net loss from the farm population through outmigration of about 325 persons living on farms in 1950 and still living in 1958 but not on farms. As will be pointed out more fully in the section to follow, most of the people who left the farm population in the sample precincts also left Mills County. Only a small proportion of the persons who had left were still living in Mills County at the time of the survey.

**FERTILITY AND DEPENDENCY RATIOS DROPPED**—The Mills County farm population has been characterized by a relatively low ratio of young children (under 5) to women of childbearing age (15-44) for several decades. This measure, termed the fertility ratio, shows declines in recent years. In 1960, there were only 453 children under 5 years of age per 1,000

TABLE 6. FARM POPULATION AND SEX RATIO BY AGE, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950

Age	Number		Percentage distribution		Sex ratio <sup>1</sup>	
	1958	1950	1958	1950	1958	1950
Total	655	995	100.0	100.0	111	111
Under 45 years	382	692	58.3	69.5	112	110
Under 15	169	290	25.8	29.1	117	112
15-19	51	89	7.8	8.9	104	107
20-24	26	62	3.9	6.2	160	148
25-34	49	95	7.5	9.6	123	102
35-44	87	156	13.3	15.7	93	103
45 and over	273	303	41.7	30.5	110	112
45-54	121	140	18.5	14.1	105	122
55-64	96	86	14.7	8.7	118	91
65 and over	56	77	8.5	7.7	107	120
Median age	38.7	30.9				

<sup>1</sup>Number of males per 100 females.

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

TABLE 7. POPULATION BY AGE, MILLS COUNTY SAMPLE PRECINCTS, 1958, 1950 AND 1940

Age	Number			Percentage distribution		
	1958	1950	1940	1958	1950	1940
Total	655	995	1,782	100.0	100.0	100.0
Under 5 years	39	94	187	6.0	9.4	10.5
5-14	128	196	379	19.5	19.7	21.3
15-24	80	151	296	12.2	15.2	16.6
25-34	49	95	269	7.5	9.6	15.1
35-44	86	156	232	13.1	15.7	13.0
45-54	123	140	181	18.8	14.1	10.2
55-64	94	86	139	14.4	8.6	7.8
65 and over	56	77	99	8.5	7.7	5.5

Source: 1940 Census of Population, unpublished data from 1950 Census of Population, and 1958 Texas Agricultural Experiment Station and Economic Research Service field survey.

females aged 15 to 44 in the Mills County white farm population. Comparable figures for the Texas and the U. S. white farm population for the same year were 528 and 542, respectively.

With the removal of many young adults, and particularly young women, from the farm population of the sample precincts, it is to be expected that the fertility ratio would have dropped between 1950-58. Fertility ratios for the sample precincts of 490 and 382 for these years indicate 100 fewer children under 5 per 1,000 women in childbearing years in 1958 as compared with 8 years earlier, Table 8. This decline foretells much about future population trends in the study area unless some reversal of the outmigration patterns of the past decades should occur.

Precinct 6 had higher fertility ratios in both 1950 and 1958 than did Precincts 4 and 5 combined, but proportionately its ratios dropped more during this period.

Another measure which can be used to analyze the makeup of different populations is the dependency ratio, which relates numbers of young and old people to the number of persons in the productive years. The dependent population is assumed to include all persons under 15 years of age plus all persons 65 years old and over. Persons 20 to 64 are assumed to be economically productive.

Principally because of the decline in numbers of young children the dependency ratio in the farm

TABLE 8. FERTILITY AND DEPENDENCY RATIOS OF THE FARM POPULATION, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950

Precinct	Fertility ratios <sup>1</sup>		Dependency ratios <sup>2</sup>	
	1958	1950	1958	1950
Total	382	490	594	681
4 and 5	317	386	529	741
6	426	604	647	619

<sup>1</sup>Ratio of children 0-4 years per 1,000 women 15-44 years of age.

<sup>2</sup>Ratio of persons under 15 years, and 65 years old and over per 1,000 persons 20-64 years old.

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

TABLE 9. TYPES OF MOVES MADE BY MILLS COUNTY SAMPLE PRECINCT FARM OPERATORS BETWEEN 1950 AND 1958

Types of residential changes	Total	1958	
		Farm	Nonfarm
<b>Total</b>	<b>214</b>	<b>195</b>	<b>19</b>
Household heads making no residential changes	164	153	11
Farm 1950	153	153	
Nonfarm 1950	11		11
Household heads making residential changes	50	42	8
Farm-Farm	15	15	
Farm-Farm-Farm	6	6	
Farm-Farm-Farm-Farm	3	3	
Farm-Nonfarm-Farm	2	2	
Nonfarm-Farm	13	13	
Nonfarm-Farm-Farm	1	1	
Nonfarm-Nonfarm-Farm	1	1	
Nonfarm-Farm-Farm-Farm	1	1	
Farm-Nonfarm	6		6
Farm-Farm-Nonfarm	1		1
Nonfarm-Farm-Nonfarm	1		1

Source: Texas Agricultural Experiment Station and Economic Research Service field survey.

population of the sample precincts dropped by nearly 100 points between 1950-58; older persons were a slightly larger part of the ratio in the latter year. The ratios for the years were 681 and 584, respectively, indicating that each 1,000 productive-age persons in effect bore the burden of support of themselves and those additional numbers of young and old persons.

## *Migration as an Adjustment to Drouth Conditions*

One of the major objectives of the Mills County study was to ascertain the extent to which people migrated during a prolonged drouth, the direction of their movements and the role of drouth in their moving. The previous sections on population changes in Mills County and the study precincts utilized other data to give a broad picture of net outmovement and some of its results. This section will deal more specifically with the migration of persons who either lived on farms or operated farmland in the sample precincts at some time between 1950-58.

Survey data will be utilized to analyze the role that the drouth played in the residence changes of persons in the households of the 214 farm operators who were farming land in the sample precincts in 1958. These include the 181 farm operators who were living on sample precinct farms in 1958 and those not living on such farms. As mentioned earlier, 10 of the operators lived in Priddy at the time of the survey, and 23 operators lived outside the sample precincts—9 in nonfarm places and 14 on farms. The data for the farm operators and their household members appear to be fully reported and in no need of qualification because of interviewing deficiencies.

Survey data will also be used to analyze the role that the drouth played in the movement of

persons who had lived on farms in the sample precincts (or any part of them) sometime between 1950-58 and were no longer there at the time of the survey. This latter category will be dealt with in two groups: (1) the households of 20 former operators of farmland in the sample precincts and (2) 69 individual members who had left the households of the 1958 operators or who had left the households of former operators of land in the study precincts.

The former farm operators interviewed comprised only about one-third of the total number of names of persons which had been given to the interviewers in the field survey. Some of the former operators (estimated to be about 35) could not be interviewed because they had died, moved too far away to be interviewed or for some other reason were not contacted. Although the 20 who were interviewed may be different in some respects from those who could not be contacted, full information was obtained only on this number.

The names of individuals migrating from the households of the 1958 operators appeared to be fully reported and some information about these was obtained. However, no information was obtained about individuals who may have migrated from the households of the former operators who were not contacted. Thus, the number of persons who migrated as individuals is under-reported to an unknown extent.

In the survey, the respondents were asked direct and indirect questions on how much effect they felt the drouth had had on their residential shifts and other changes and plans. It is on the answers to these questions that the following analyses are based. In many instances other factors played a part in decision-making prior to the changes, and at times it is difficult to determine the relative weight of the various factors in changes which have occurred.

### *Three-fourths of the 1958 Operators Made No Residential Shifts*

In 161 (75 percent) of the farm-operator households, the operator and the members of his household as constituted in 1958 had made no changes in residence between 1950-58, Table 9. They were living in the same house in 1958 in which they had lived in 1950. In three additional households, one member had moved away and returned during this period. Of these 164 households, 153 lived on farms inside or outside the precinct. The other 11 lived in nonfarm places in both 1950 and 1958; five of these lived in Priddy, 4 in Brownwood, one in Comanche and one in Goldthwaite. From 41 of these households, however, one or more persons who had been living in the household had moved away permanently during the period and were thus not in the household in 1958.

### *Some Operators Moved Several Times*

Of the 50 operators who made at least one move between 1950-58, 34 made only one move. Fifteen moved from one farm house to another, 13 moved from a nonfarm place to a farm and six moved from a farm to a nonfarm place. The remaining 16 farmers had made more than one move with four of them having made three moves in the 8 years. Marriage, expiration of lease, sale of a leased farm, enlargement of operations and better farming conditions were reasons other than the drouth conditions which farmers gave for moving from one farm to another. Farmers moved from town to the farm to invest in land, because they quit or were laid off from nonfarm work, because they inherited or wished to buy farmland, because they returned from some distant place or the Armed Forces, for independence and because weather conditions improved at the end of the period. On the other hand, farmers moved to town while still continuing to farm (although sometimes on a reduced scale) because of retirement, insufficient income from farming, or for nonfarm business reasons.

### *Age, Health and Drouth Influenced Farmer Retirement*

Persons who had operated farmland at any time between 1950-58 in the sample precincts, but who were no longer farming in 1958, were interviewed to determine the type of move they made if any, the type of production or operational changes they made before quitting and why they quit farming.

Twenty former operators of farmland in the study area were contacted and interviewed. Eight of the former operators continued to live in the same household when they ceased their agricultural operations. The remainder had established a nonfarm residence in towns such as Goldthwaite, Comanche, San Saba, Pottsville, Brownwood and Waco. These former operators who had moved to town consisted of eight who made a direct farm to nonfarm move and four who made several moves during the period.

Most of the former operators had farmed for a considerable length of time before quitting. Twelve had farmed more than 10 years and six had farmed more than 30 years. Questions on major items produced revealed that they had been predominantly grain and livestock farmers. The patterns of operational adjustment and changes made before they quit farming followed closely the patterns observed for those still operating farms in 1958. (See section on Farming Adjustments.) A number of these operators shifted acreage and cut their livestock numbers during the drouth years when they operated farms. About half of the operators felt they were influenced by drouth in their decisions to make the operational changes reported.

Former operators were asked if the drouth or some other reason had caused them to quit farming.

Half of the operators reported that they left the farm mainly because of advanced age, poor health or retirement, and two operators left to enter a nonfarm business. Low incomes from farming and lack of security in farming were cited by five former operators as their major reason for quitting farming and two mentioned the drouth as a major reason for no longer farming. Eleven former operators considered the drouth along with reasons cited above to have either directly or indirectly had some influence upon their giving up farming altogether.

Although the drouth exerted some influence on these former farm operators quitting the farm, advanced age and poor health were about equally important. The average age of former operators was 58 years. It may be speculated that approximately half of them would probably have retired even if the drouth had not occurred. However, the drouth probably induced a few to quit earlier in point of time than they had planned.

### *Drouth Influenced Migration of Individuals*

Another group for which migration information was obtained was former members of 1958 (or previous) farm-operator households of the study precincts, since considerable migration from farm areas is normally expected among individuals leaving their family homes. Information was sought on reasons for leaving home and the influence of the drouth (if any) on decisions to leave; on number and types of moves made; as well as information on personal and economic characteristics. Survey household respondents supplied names, current address or location, year of last move from the family home and the type of last move the mover had made. Respondents reported that 69 individuals had moved from their households between 1950-58.<sup>4</sup> Fifteen persons were located and interviewed personally; 38 were not contacted personally but a limited amount of information on them was obtained from a member of the household from which they had moved. For the other 16 their name, year of move and location at the time of the survey was obtained.

Of the entire group, 58 were living in Texas at the time of the survey. Many of them were either still in Mills County or in the nearby counties of Hamilton, Comanche or Brown, although others were more widely scattered. The 11 residing outside the State included persons in the Armed Services (some of them out of the country) and a few in college. One person had migrated to Massachusetts, another to Utah and a third to New Mexico. Of the 58 living

<sup>4</sup>Sixty-five of the individuals were from households of 1958 farm operators, with this group probably being fully accounted for. Four additional individuals were reported by former farm operators, with this group being under-reported since data were obtained from only 20 former operators. Information for the four has been combined with that for the larger group of 65, since they left one-time farm-operator households of the survey area.

in Texas, 49 were living in nonfarm places. Cities such as Dallas, Fort Worth, Houston, San Antonio, Austin, Corpus Christi, Galveston, Lubbock, San Angelo, Midland and Odessa had attracted at least one of the migrants from Mills County, and others were living in smaller towns and cities. The nine persons moving out of the sample area, but still living on farms, generally were located in the Mills County area but not in the study sample area or in nearby counties.

The group of 69 was composed of about three-fifths females and two-fifths males. More of the males than the females were to be found in nearby places. About half of the males were in Mills, Comanche, Hamilton and Brown Counties and half were scattered in other counties of Texas or outside the State. On the other hand, only two-fifths of the women were in Mills or the three adjacent counties. Most of the longer distance migrants had gone with their husbands to nonfarm places following marriage. Differential migration of the sexes over the years is in part responsible for the high sex ratios noted in an earlier section.

Information on age of migrants at the time of the survey and on the year they left the parental household provides a rough measure of the age selectivity of migration, Table 10. About three-fifths of the 53 persons for whom this information was available had left home at ages 16, 17 or 18. The proportion of females leaving at these young ages was higher than among males, as is customary in migration of young people from most farm areas. Other studies have shown that rates of outmigration are higher for females than for males and they tend to leave earlier than do males.<sup>5</sup> For all but five of these youngest women, and for a large proportion of those leaving at older ages, marriage was indicated as the principal reason for leaving home. Other reasons for leaving were to go to college or to obtain nonfarm employment.

Migration of males occurred most often at ages 18, 19 and 20, after they found that they could not or were not likely to find jobs or farming opportunities in Mills County, or at the time of marrying and starting their own homes. The men who were in the Armed Forces had left home at ages 19, 20 or 21, indicating that they had had some years of work experience before entering the Service. Some of them reported that they had tried farming but could not make a go of it or were dissatisfied with

<sup>5</sup>"Farm Population . . . Net Migration from the Rural-farm Population 1940-50" by Gladys K. Bowles, AMS Statistical Bulletin 176, U. S. Department of Agriculture, Washington, June 1956; "Population Change and Migration in Oklahoma 1940-50" by James D. Tarver, Oklahoma Agricultural Experiment Station Bulletin B-485, January 1957; and "Migration of the Texas Farm Population" by Robert L. Skrabanek and Gladys K. Bowles, Texas Agricultural Experiment Station Bulletin 847, February 1957.

TABLE 10. AGE AT MIGRATION OF INDIVIDUAL MIGRANTS FROM MILLS COUNTY SAMPLE PRECINCT FARM-OPERATOR HOUSEHOLDS, 1950-58

Age at migration <sup>1</sup>	Total	Male	Female
All ages	53	20	33
16 years	6		6
17	13	1	12
18	12	5	7
19	6	4	2
20	6	5	1
21	4	1	3
22	3	1	2
23 and over	3	3	

<sup>1</sup>Approximated from data on age at the time of the survey and year migrant left home.

Source: Texas Agricultural Experiment Station and Economic Research Service field survey.

farming conditions in Mills County during the dry period.

Six of the migrants had left parental farm homes but were living on other farms. Thus, only one-tenth of the migrants for whom information was available were farming. All but one of these indicated that marriage was the principal reason for leaving the parental home.

Only a few of the women indicated the drouth had influenced their leaving farm homes, although an indirect relationship may be presumed in some cases where a young woman married a man who had left because of the drouth. Reasons other than the drouth were more important in the migration of women.

For men, on the other hand, the drouth appeared to have had a direct influence on migration patterns. Drouth was mentioned as the principal reason for leaving by about half of the male migrants, who apparently felt there was little opportunity to have the level of living they desired through farming. Some indicated that marriage was the main reason for leaving the family home, and the male migrants also apparently felt that leaving the area was a necessity as job opportunities were not available locally. Since most were not financially able to start farming elsewhere, they sought nonfarm work in other places.

Information on occupations of migrants indicated that most of the male migrants not in the Armed Services were employed at nonfarm wage or salary work in 1958. Nineteen of the women were reported as housewives and 12 were engaged in nonfarm work. A small number of migrants were in college or not working.

Nearly all the migrants had either completed several years of high school or had graduated from high school. In addition, about half of the women had some schooling beyond high school. Some of these had been to business or technical schools and



others had attended a college or university. A number had attended college in the adjoining county either on a full-time or part-time basis.

An inquiry about the number and types of moves made by the migrants between 1950-58 revealed that three out of every four persons made a direct farm to nonfarm residence change. The proportion of males making a direct farm to nonfarm move was considerably higher than females, 80 and 70 percent, respectively. Nine migrants reported making several moves during the study period. Eight of these were located at a nonfarm residence in 1958. Females were predominant among the more mobile migrants, the ratio being approximately two to one.

Migrants who were interviewed personally were asked additional questions to determine the influence of drouth on their attitudes toward farming and ranching, their employment for the 1950-58 period, their college attendance, their desire to remain on the farm and their future plans.

Practically all of the persons contacted evidenced no change in their attitude toward farming, which was usually favorable. The few who indicated a change in their feeling toward farming looked upon it even more favorably than before. Only one respondent indicated that the drouth had a negative influence upon his opinion of farming.

After leaving the farm-operator households, a fifth of the migrants interviewed had engaged only in farm work during the 1950-58 period, and a third had engaged only in nonfarm work. Forty percent indicated a switch from farm to nonfarm employment or getting a nonfarm job in addition to their farm work. Those persons who changed their employment status indicated that drouth had been influential in causing this change. Several said money earned from nonfarm work had influenced their moving from the farm.

None of the respondents felt the drouth had played a part in their not attending college. Those who had planned to attend college were able to do so and the others indicated no desire to attend. When asked if they had wanted to remain on the farm, about two out of five of the migrants indicated this would have been their preference. The respondents' reasons for not being able to stay on the farm were marriage, college attendance, lack of employment opportunities and the drouth. About one-third of the migrants considered the drouth to have played a part in their change of residence.

Almost half of the persons who left farms during the drouth years indicated they did not plan to return to farming in the next few years. A number of these migrants considered the drouth to have some influence on this decision.

Several of the migrants who reported a desire to return to farming remarked they would not want

to do so until they were reasonably sure the drouth was over.

## *Farming Adjustments*

### *Mills County, 1950-59*

As previously indicated, Mills County has traditionally been largely dependent upon agriculture. The Censuses of Agriculture for 1950, 1954 and 1959 provide certain statistics which may be used in determining what happened in agriculture in Mills County as a whole for this period of years. In 1950 Mills County had 1,061 farms and ranches, as contrasted with 893 in 1954 and 767 in 1959, declines of 16 and 14 percent, respectively. With essentially the same amount of land remaining in agricultural production, the average size of farm increased from 407 acres in 1950 to 475.3 in 1954 and 553.3 in 1959.

Only those farms and ranches which were 1,000 acres or larger increased in number between 1950-59. During this period, these larger farms increased by about one-fourth with most of the increase occurring between 1954-59; their number rose from 82 in 1950 to 89 in 1954 and to 103 in 1959. Although the number of farms was fewer in all other size categories, the largest proportionate decrease was in the smallest farms—10 acres or less. A part of this loss is due to a change in definition by the Bureau of the Census of what constitutes a farm. At the same time, there is no doubt that the overall trend has been toward fewer but larger farming operations.

Although livestock production remained important in the agricultural economy of Mills County, a major shift was made in the type of livestock produced during the drouth years.

There were about the same number of cattle and calves on Mills County farms in 1959 and 1950, but fluctuations occurred in their number during the drouth years. In 1954 there were 1,500 less cattle and calves on farms than in 1950. Between 1954-59, herds were built back up and in 1959 there were 21,557 cattle and calves as compared with 21,368 in 1950.

The biggest change occurred in the number of sheep and lambs and goats and kids produced on Mills County farms and ranches. In 1950 there were 98,009 sheep and lambs in the county. Their number dropped off to 94,429 in 1954 and expanded by 1959 to 126,162. A considerable expansion took place in the production of goats and kids, raised mostly for mohair. In 1950, there were 54,674 goats and kids enumerated on Mills County farms. They had increased to 77,599 by 1954, and by 1959, the number of goats had increased to 95,558.

Cotton and peanut production declined during the period under consideration in Mills County. In 1949 there were 5,478 acres planted to cotton, but

TABLE 11. NUMBER OF FARMS, MILLS COUNTY SAMPLE PRECINCTS, 1958, 1954 AND 1950

Precinct	Number of farms			Percentage change
	1958	1954	1950	1950-58
Total	214	242	282	-24.1
4 and 5	95	112	135	-29.6
6	119	130	147	-19.0

Source: 1954 and 1950, unpublished data from the 1954 and 1950 Censuses of Agriculture, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

only 2,645 acres in cotton in 1954 and 1,862 acres in 1959. Acres planted to peanuts fell from 1,793 in 1949 to 889 in 1954 and 796 in 1959.

One of the effects of drouth may be noted by taking into consideration the number of farms that were irrigated. The Census of Agriculture lists only one irrigated farm in 1950, and the number increased under drouth conditions to 19 in 1954. By 1959, when the drouth was considered as definitely having been broken, the number of irrigated farms had declined to eight.

### Mills County Sample Precincts, 1950-58

That the prolonged period of drouth necessitated many agricultural adjustments on the part of sample precinct farmers is evidenced by the fact that only 12 percent of the operators farming in 1958 for whom information was obtained went through the drouth years without making either a major production or operational change.

Farming adjustments in the Mills County study precincts during the drouth appeared to occur in a fairly well-defined sequence pattern. During the first 2 or 3 years of drouth, farm operators were apparently optimistic about the future and underwent a period of uncertainty in regard to making changes in their farming operations. Thus, at first, adjustments were attempted on a small scale to meet these new conditions. During the next 2 to 3 years their optimism began to wane as the drouth continued, with efforts

TABLE 12. AGE OF FARM OPERATORS, MILLS COUNTY SAMPLE PRECINCTS, 1958 AND 1950

Age	Number		Percentage distribution	
	1958	1950	1958	1950
Total	214	282	100.0	100.0
18-19 years	1	3	.5	1.2
20-24	2	15	.9	5.4
25-34	18	39	8.4	13.8
35-44	45	77	21.0	27.1
45-54	66	74	30.9	26.2
55-64	51	35	23.8	12.5
65 and over	31	39	14.5	13.8
Median age	51.2	45.9		

Source: 1950, unpublished data from 1950 Census of Population, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

at adjustments becoming more intensified and being attempted on a broader basis. As the drouth remained unbroken from 1950-57, the rate and magnitude of both population and farming adjustments appeared to slow down during its latter stages.

A general description of some of the farming adjustments made in the study areas during the drouth years follows.

NUMBER OF FARMS DECLINED BY 24 PERCENT—According to the Bureau of the Census, there were 282 farms in the Mills County sample precincts in 1950. In 1958 there were 214 farms remaining in the area, which represents a decline of 24 percent, Table 11. This decline in number of farms during the drouth years was higher than the percentage decline in number of farms experienced by Texas and the United States as a whole during the same period. The percentage declines for these were 21 and 22, respectively.

Unpublished data from the 1954 Census of Agriculture revealed that the rate of loss in farm numbers in the study area was slightly less during the last half of the eight-year study period. Farms declined by 14 percent between 1950-54, and by 12 percent between 1954-58, closely paralleling changes for Mills County as a whole. Precincts 4 and 5 had substantially higher declines than Precinct 6. These differences may be explained in part by cultural, soil, size and type of agricultural enterprise differences.

PERCENT OF OLDER FARMERS INCREASED—When changes in the numbers of farm operators are examined by age, striking differences between 1950 and 1958 become apparent. As a result of many younger farmers quitting farming during the drouth, the proportion of farm household heads under 45 years of age declined from 48 to 31 percent of the total during this 8-year period. Part of this decline in number of younger heads of farm households is also due to aging, as not many young men started farming during this period when returns from farming were expected to be very low. The percentage that older farmers (65 years of age and over) comprised of the total remained about the same during the drouth years, but those in age groups 45-54 years and 55-64 years increased. The median age of farm household heads increased from 45.9 years to 51.2 years during the period under study, Table 12.

SIZE OF FARM INCREASED—As farm numbers decreased during the drouth period in the study area, greater changes took place in farms under 100 acres and over 1,000 acres than in other farms. In 1950, 21 percent of the farms were less than 100 acres. By 1958 this proportion had dropped to 6 percent. At the same time, large farms (1,000 acres or larger) increased from 9 to 17 percent of all farms, Table 13, with all the increase occurring in Precincts 4 and 5. A considerable increase also occurred in the proportion of farms that were 500 to 999 acres which in-

creased from 12 to 17 percent of all farms between 1950-58. Large farms became more numerous as farmers enlarged the size of their operations by buying or renting additional land from farm operators who were no longer farming. This increase in the number of large farms in the area resulted in the average size of farm increasing by about two-thirds during the 8-year period, from 418 to 707 acres.

Unpublished data from the 1954 Census of Agriculture for the study precincts revealed that farms intermediate in size fluctuated in the proportion they comprised of all farms during the study period. The proportion that farms 100 to 139 acres comprised of the total fell between 1950-54, but by 1958 they had increased almost back to their 1950 level. Farms of 140 to 179 acres reached their peak in 1954 and declined slightly by 1958. The proportion of farms 180 to 259 acres dropped in 1954 and increased beyond their 1950 level in 1958. Farms of 260 to 499 acres were the only group which comprised approximately the same proportion of all farms throughout the period.

**FARMERS SOLD MORE PRODUCTS** — For the 1957 crop year, 16 percent of the farms reported a value of farm products sold in excess of \$10,000, as compared with only 6 percent in 1949. Although this value of sales would appear to be high, it must be remembered that in 1958 over 17 percent of all farms in the study precincts were 1,000 acres or larger in size. Farms with value of products sold in the preceding years of under \$400 and between \$400 to \$799 decreased by 38 and 45 percent, respectively, between 1950-58 while those with sales over \$10,000 increased almost 90 percent. This indicates that those who ceased operation after 1950 were mainly on farms with low values of products sold, made up largely of small-scale full owners and tenants.

Operators were asked to estimate the value of farm products sold for their worst drouth year, as well as in 1957, so that effect of the drouth could be measured. The majority of the farmers indicated a much lower income in the worst year. Practically all in this group attributed their lower values of farm sales to the severity of the drouth in that year, but changes in size and type of farm operations also have contributed to the difference. A few operators who said they had a higher value of farm products sold during their worst drouth year attributed this higher value of products sold to the sale of livestock. They further indicated that they sold off their livestock during certain years because of the lack of grass and vegetation caused by the drouth. About 30 percent of the farmers in the area reported no change in their value of farm products sold.

**PART-OWNERS INCREASED** — Operators were classified into three groups to examine changes in their tenure status during the drouth years. The groups were: full owners; part-owners and managers; and

TABLE 13. LAND IN FARMS AND PERCENTAGE DISTRIBUTION OF FARMS BY SIZE, MILLS COUNTY SAMPLE PRECINCTS, 1958, 1954 AND 1950

Size of farm	Year		
	1958	1954	1950
Total farms	214	242	282
Percent	100.0	100.0	100.0
Under 100 acres	5.6	17.8	20.6
100-139	11.2	9.1	11.7
140-179	13.6	14.0	12.1
180-259	13.6	10.3	12.4
260-499	21.4	21.1	21.6
500-999	17.3	15.7	12.4
1,000 and over	17.3	12.0	9.2
Land in farm (000's of acres)	151	128	118

Source: 1954 and 1950, unpublished data from the 1954 and 1950 Censuses of Agriculture, Bureau of the Census; 1958, Texas Agricultural Experiment Station and Economic Research Service field survey.

all tenants. There was little change in the proportion of operators classified as full owners; in both 1958 and 1950 about half of the operators owned all the land they were operating. The proportion that part-owners and managers comprised of all operators increased considerably during the study period, from 21 to 34 percent. These were farmers who indicated that they were forced to rent additional grazing land during the drouth years. On the other hand, the proportion of operators who were tenants dropped from 27 percent in 1950 to 17 percent in 1958.

**OPERATORS HAVE HAD SAME FARMS FOR MANY YEARS** — The response to the question "How many years have you operated this farm?" revealed that despite unfavorable farming conditions, new operators continued to enter farming in the study area during the drouth years. In 1958, 9 percent of the operators in the sample precincts indicated they had started farming within the period of years under observation. Precinct 6 attracted more new farmers during the drouth years than either Precinct 4 or 5. About three out of every five operators who reported they had started operating the present farm during the drouth period were in Precinct 6. About 23 percent additional farms in the sample precincts had been operated by the present operator less than 10 years. Thirty-six percent of the farmers and ranchers had operated their present farm or ranch 10 to 19 years, and 31 percent had operated their farms 20 years or more.

**FORTY-THREE PERCENT OF OPERATORS MADE ACREAGE CHANGES** — About two out of five of the operators in the Mills County study precincts reported adjustments in acreage operated during the drouth years.<sup>6</sup> Sixty-two operators increased the size of their operations during the 8-year period while 24 operators reduced acreage. Three operators first decreased acre-

<sup>6</sup>Data in this and following sections on adjustments and shifts in amount of acreage operated, kind and number of livestock raised and shifts in acreage devoted to specific crops are based on reports from 211 operators.

TABLE 14. INFLUENCE OF DROUTH AS REPORTED BY MILLS COUNTY SAMPLE PRECINCT-FARM OPERATORS WHO MADE ADJUSTMENTS IN ACREAGE, CROPS, LIVESTOCK, AND LABOR DURING 1950-57

Adjustment	Farms reporting specified change		Role of drouth					No answer
	Number	Percent of all farms	Percentage distribution					
			Total	Major	Minor	Drouth presumed to be a factor	No effect	
Acreage operated	91	43.1	100.0	73.6	12.1	6.6	7.7	
Crop production	66	31.3	100.0	72.7	10.6			16.7
Livestock production	138	65.4	100.0	94.2	4.3			1.5
Use of hired and family labor	76	36.0	100.0	78.9	8.0			13.1

Source: 1958 Texas Agricultural Experiment Station and Economic Research Service field survey.

age and then increased it later. Two operators reported the opposite situation—increasing acreage first and then cutting back as the drouth continued. These changes in size of operations were accomplished through such usual means as leasing or renting, buying or selling and inheriting land. Records were not obtained on land acquired through inheritance. Among operators who increased acreage during the drouth years, a majority did so by renting additional land, and the rest bought more land. Other operators increased their holdings by a combination of renting and buying additional land or renting out less land to other farmers.

Six farmers decreased the acres operated by renting out more land, 13 rented in less land, and 7 operators decreased land operated through other combinations of renting and buying land. The acreage and conservation reserve program initiated in 1955 also had some effect on the size of farming operations.

Open-ended questions were used to determine the various reasons for making adjustments in the amounts of acreage operated during the period of years under consideration. About four out of five operators indicated they considered the drouth to have played a part in their decision regarding the acreage change whether it was in increase or a decrease, Table 14. Operators who did not consider the drouth as being a factor in their change of acreage gave such reasons as poor health, old age and being new farmers.

Both situations—expanding and cutting back—involved shifting acreage devoted to row crops, livestock grazing and feed for livestock.

Changes in acreage operated usually accompanied some change in either crops, livestock or amount of labor used. Of the operators reporting acreage changes, only 11 made these adjustments without an accompanying shift in crop production or livestock changes.

**ACRES OF CROPS HARVESTED DECLINED**—Almost a third of the operators in the sample precincts made adjustments in their crop production during the drouth years. The general trend during the period was to cut down on crop acreage. Of the operators

who reported a change in cropland, about four out of five had reduced their acreage. Six of the 51 operators reporting a decrease in crop production indicated they had first increased production before making the reduction.

One significant factor about the decreases and increases in crop acreage is the degree to which these changes were adopted. Ten of the operators reporting increased crop production indicated the degree of change; among these, eight operators expanded their acres in crop production by half or less. In contrast, more than half of the 39 operators who reported the degree of cutting back on acreage devoted to crops decreased their production by half or more.

Some changes in acreage devoted to crop production took place every year between 1950-57. However, for each successive year from 1950 to 1953 the number of operators making changes increased. After the peak number of operators making changes was reached in 1953, fewer changes were made each successive year through 1957.

Of the 66 operators who made some type of change in crop acreage, only six did so without involving changes in farm acreage, livestock or amount of labor used. Five operators who made a shift in crops as their only major farming adjustment during the drouth years reduced crop production.

Respondents were asked about the various factors entering into their decisions to increase or decrease their acreage in crop production. Over 70 percent of the farmers and ranchers in the study precinct who made changes in crop production indicated that drouth had been a major factor, Table 14. About one out of ten operators felt that although the drouth entered in as a factor, it played only a minor or subordinate role in their decisions to change crop production practices. Among other factors which were listed were acreage allotments and the Soil Bank Program.

**COTTON AND PEANUTS HARVESTED DECLINED**—The number of farms producing cotton in the sample precincts decreased by about 40 percent during the drouth years and only about one-third as many acres

were planted to cotton in 1957 as compared with 1950, Table 15. A number of smaller farm operators indicated that their cotton allotments became too small for efficient production and that this was a factor in their giving up cotton production. However, a large proportion of the operators felt that the drouth was a major factor in their cutting back in cotton production.

There was a moderate decrease in peanut production between 1950-57, with the decline occurring between 1950-54 and some increase occurring between 1954-57. Acreage in peanuts declined 46 percent between 1950-54, and farms reporting planting peanuts declined 39 percent. Between 1954-57, both acreage in peanuts and farms producing peanuts increased, but not back up to the 1950 level. This decline during the 1950-54 period occurred when, according to a number of respondents, the worst drouth conditions prevailed. Increased peanut production occurred in later years when rainfall increased during the fall of the year. More rain fell in 1957 than at any time since the beginning of the rainfall shortage in 1946.

**OPERATORS SHIFTED FROM CATTLE TO SHEEP AND GOATS**—Although adjustments in the number of acres operated and in the amount of land devoted to crops during the drouth period assumed significant proportions, farmers and ranchers in the study precincts were even more active in making changes in their livestock numbers. Almost two-thirds (138) of the operators made some noticeable change in livestock.

Perhaps the most far-reaching production changes occurred in the different types of livestock which were raised during the prolonged drouth. For the

TABLE 15. SELECTED CROPS HARVESTED AND LIVESTOCK ON FARMS IN MILLS COUNTY SAMPLE PRECINCT, 1957, 1954 AND 1950

Item	1957 <sup>1</sup>	1954	1950
<b>Cotton harvested</b>			
Farms	64	79	105
Acres	1,128	1,920	3,286
Average (acres)	18	24	31
<b>Peanuts (total grown)</b>			
Farms	33	23	38
Acres	983	656	1,221
Average (acres)	30	29	32
<b>Cattle and calves</b>			
Farms	171	215	252
Number	5,226	5,485	6,316
Average (numbers)	31	26	25
<b>Sheep and lambs</b>			
Farms	150	151	134
Number	32,998	26,599	21,985
Average (numbers)	220	176	164
<b>Goats and kids</b>			
Farms	97	74	46
Number	36,748	19,759	9,121
Average (numbers)	379	267	198

<sup>1</sup>1957 data relate to acres planted for crops and peak numbers for livestock.

Source: 1954 and 1950, unpublished data from the 1954 and 1950 Censuses of Agriculture, Bureau of the Census; 1957 data from 1958 Texas Agricultural Experiment Station and Economic Research Service field survey.

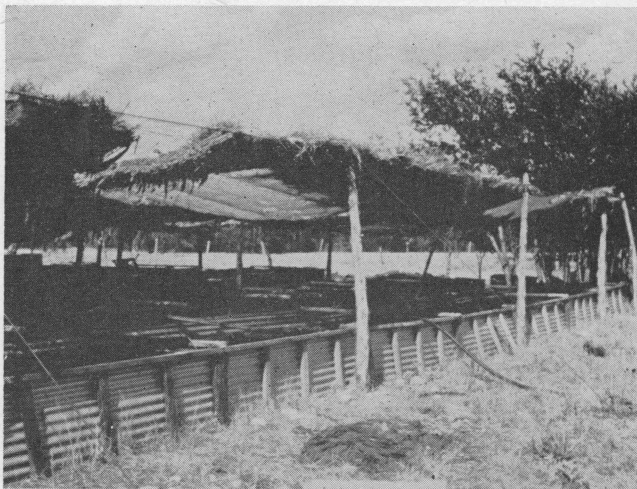


Figure 8. Portion of "worm ranch" near Priddy showing beds of worms being propagated in Canadian peat moss. This is one of the successful enterprises a young farmer started during the drouth years.

period under consideration (1950-57 crop and livestock years) the number of cattle and calves on farms and ranches declined by 17 percent and the number of farms having cattle and calves declined by about one-third.

The big increases were in sheep and lambs and goats and kids. Much of the terrain in Mills County is rough with considerable growth of low brush, a combination which lends itself to sheep and goat production. During the 8-year period the number of sheep and lambs increased by 50 percent. The number of goats and kids doubled between 1950-54 (from 9,000 to 20,000) and quadrupled between 1950-57 (Figure 8, Table 15).

There is little doubt that drouth was the major force that brought about the shift in Mills County from cattle particularly to goats. Soon after the beginning of the drouth the forage supply was badly depleted for cattle. Sheep and goats, however, could still graze underbrush, weeds and leaves from small oak trees and less feed was needed for this type of livestock.

A change in livestock numbers was the only major adjustment in farming operations made by a number of farmers. Although adjustment in livestock numbers was usually accompanied by changes in either acreage or crops or both, about one out of four operators shifted his livestock production without involving these other changes. Other adjustments reported by operators making a change in livestock but none in acreage, crops, or labor included (1) irrigation, (2) poultry production and (3) building earth tanks.

Practically all of the farmers and ranchers who made changes in the types of livestock raised felt that these were adjustments necessitated by the drouth. Furthermore, they felt that they were wise in decid-



Figure 9. Wives and daughters of Mills County farm operators' households supplement family income by working in a mistletoe-packing plant in Goldthwaite.

ing to make these adjustments. A typical answer to the question, "What production shifts did you make that proved helpful during the drouth period?" was the reply, "The luckiest thing I did was turn to sheep and goats. It is the only thing that saved many of us from complete bankruptcy."

Questions dealing with the effect of the drouth revealed that more operators were influenced by the drouth in their decisions to shift livestock numbers than in other farm enterprise changes, Table 14. Ninety-eight percent of the farmers and ranchers considered the drouth a factor in changing livestock numbers as compared with about 80 percent of those making acreage and crop production shifts.

**OTHER PRODUCTION ADJUSTMENTS WERE MADE —** Other production changes which were of consequence during the drouth should be noted. One was a shift to poultry production. Although data were not obtained on the number and size of poultry flocks at the beginning of the study period, 30 operators indicated they had made some shift in their poultry production during the drouth years. Of this number, two indicated they had decreased poultry production and one farmer quit the poultry business. The remaining farmers indicated they either started in poultry production during the period or made substantial increases in the size of their poultry flocks.

A number of new modern poultry houses was evident when the study was made in 1958. When questioned about the reasons for venturing into poultry production, a majority indicated that the drouth was a major factor. Likewise, a majority felt poultry production was a successful venture and said they would do it again under the same set of circumstances. As in the case cited previously in connection with sheep and goat production, numerous operators expressed the opinion that shifts to poultry production were a fortunate adjustment which helped them to counteract other effects of the drouth.

Irrigation was not being practiced by Mills County farm and ranch operators before the beginning of the drouth. The 1945 Census of Agriculture lists no irrigated farms in Mills County, and only one irrigated farm is indicated in the 1950 Census of Agriculture.

At the time of the 1958 field survey, 14 operators stated they were irrigating their farmland. Ranchers who had started irrigating during the drouth year were particularly concentrated in Precinct 5. They all indicated that the drouth was the primary factor in their decision to invest in irrigation systems. They also felt that irrigation helped them considerably during the drouth years. Several operators who had not yet begun to irrigate their land indicated that if the drouth did not end soon they would start irrigating in the near future. On the other hand several of those irrigating indicated that they would discontinue this practice if they had some assurance that the drouth would end soon.

Some unique enterprise adjustments were discovered in the course of carrying out the field study. One farm operator started in the business of growing fishing worms after the drouth began and had apparently become highly successful in this venture, Figure 9. In his opinion, the drouth played a definite role in the development of his "worm ranch" business. Other operators reported that the drouth stimulated the building of more "earth tanks" or "water storage tanks" to provide water for livestock.

Sixty-three operators in the Mills County study area stated that they had definite plans in mind in regard to changing their farming and ranching operations which were disrupted by the drouth. Nineteen operators had planned to increase the size of their farming operations but were afraid to take the risk during the drouth period. Another 16 had planned to make improvements on their land and property, 11 had planned to buy equipment and stock, seven had financial plans disrupted and six had intended to change their type of farming. All of these operators believed strongly that their plans would have been carried out if it had not been for the drouth.

**MOST ADJUSTMENTS APPEARED TO BE BENEFICIAL—** After the specific farming adjustments made during the drouth were reported by each operator, he was then asked to give his evaluation of how these changes turned out — whether they improved his overall situation, caused it to be less favorable or had either little or no effect upon his overall situation.

Several adjustments were described by the farm operators as being beneficial during the drouth years. For example, 14 operators felt they were better off as a result of increasing acreage operated; 21 named starting or increasing poultry flocks as a beneficial change; 20 stated that decreasing the size of cattle herds and/or increasing their sheep or goats was a

wise decision; 12 operators believed their situations had been improved by irrigating; and 2 were of the opinion that they had done the right thing by getting out of cotton farming.

On the other hand, a number of operators felt they were better off for having cut down on acreage, livestock or poultry.

A majority of the operators who had made changes in farming operations during the drouth years felt that for the most part their decisions were wise ones, although the decisions were often not the same from farm to farm. A few, however, mentioned making decisions which they felt made their situations worse. In this category were 12 operators who felt that cutting down on livestock had not turned out to be a wise decision.

### ***Other Adjustments to Drouth***

While the population and farming adjustments described were taking place in the Mills County study precincts, other forms of adjustments were being attempted simultaneously.

#### ***Half of the Operators Had Taken Jobs off the Farm***

Farm operators and their families in the study area made numerous occupational adjustments during the drouth period. Nearly half of the operators had worked at one time or another away from their farm since the beginning of the drouth, and a majority of these indicated that declining farm income caused by drouth had been instrumental in their taking off-farm work to supplement their farm income. Only one-eighth of those having done off-farm work had given up the off-farm job by 1958. Those who were still engaged in other employment were asked what they intended to do with their off-farm jobs when rainfall became plentiful again in the future. Of the 89 operators who had other employment in 1958, 33 said they would give up the extra job, but 25 said they intended to keep their job. The remainder either had not given this question careful consideration or did not care to express an opinion about what they would do.

On 31 percent of the sample farms the operator was the only family member with additional off-farm employment in 1958. Thirteen of the farm-operator households had members who held off-farm jobs while the head of the household did no off-farm work. But in one-sixth of the farm-operator households both the operator and other family members had engaged in off-farm work at some time since the beginning of the drouth.

It was observed during the survey that a number of wives and daughters were working in a mistletoe-packing plant located in the county, Figure 10. This work lasted for only a short season prior to Christmas.

Some wives had entered the school-teaching profession for the first time during the drouth years, even though they had never taught school since earning their degrees some years previously. Others resumed school teaching after having previously given it up. In almost every case of first entry or re-entry into school teaching, the wives felt strongly that the drouth was a deciding factor in their making this change. There were a few who said that other factors (such as their children having left home) entered into their decisions, but even in these cases they felt that low incomes due to the drouth played a prominent part in their decisions.

When asked what they thought family members would do about their off-farm jobs after the drouth was over, only seven operators replied that they thought the members of their families would no longer continue to work away from their farms. About 60 percent of the farm households which had operator and/or family members working off-farm felt the drouth was a major factor in the seeking of other employment. Nearly a fifth felt the drouth played only a minor role in their taking nonfarm work while 16 percent considered the drouth to have had no bearing on their decision. A high proportion (79 percent) of the operators asserted that money earned through off-farm jobs played a definite part in permitting them to remain in farming during the drouth years.

#### ***Changes Were Made in Use of Labor***

Important adjustments also took place in the use of hired and family labor during the study period. In general, the shift was away from the use of regular and seasonal hired labor with an increase in the amount of family labor used. Changes in the use of different kinds of labor had no particular pattern on a year-to-year basis, but most of the changes reported took place before 1956, with there being very little change in 1957.

Over a third (76) of the farmers and ranchers in the study reported shifts in the amount of labor (including family) used during the study period. Half of these decreased the amount of labor, about 40 percent increased the labor used, and the rest had both decreases and increases in the period.

Over 85 percent of the operators who had made labor use changes indicated that these shifts were influenced by the drouth regardless of the type of labor changes adopted, Table 15. Ninety-five percent of those who decreased labor and 77 percent of those who increased labor felt the drouth — either directly or indirectly — was a significant factor. The adjustments indicated previously in the amount of land operated and types of crops and livestock produced were undoubtedly related to shifts in labor use. Other reasons mentioned for making changes in labor were high labor costs and advanced age of the operator.

## ***Drouth Influenced Payment of Social Security Taxes***

An amendment to the Social Security Act in 1954 made participation in the program for farm operators mandatory if they made a specified minimum income from their farming operations. Thus the Social Security program applied to the farmer during the latter portion of the period covered in this study.

Farm operators were asked if they had made Social Security payments for the crop years 1955, 1956 and 1957 as a result of their farming operations. Eighty-four percent of the operators made Social Security payments for at least one of the three specified years under consideration. Of the 177 farm operators who made some payments, 85 percent paid for all years; 11 percent paid 2 years; and the remainder paid their Social Security tax only 1 year.

Among operators who did not pay Social Security taxes, 50 did not pay the tax because of low farm earnings in 1955; 40 failed to do so for the same reason in 1956; and 36 in 1957. When asked about the factors involved in nonpayment of the Social Security tax, 38 operators considered drouth as the main reason for insufficient income for payment. A number of others felt that while the drouth was a factor other items were equally important.

## ***Net Worth Stayed the Same or Increased for Most Operators***

Data were obtained on the net worth of farm and ranch operators in Mills County study precincts for 1950 and 1958 with the intention of using this information to gauge the effects of drouth upon their financial status. Data reported in connection with net worth estimates apply to only 177 operators in the sample precincts. This is chiefly because a number of operators did not feel they were able to estimate appropriately this new worth in 1950.

More than half (56 percent) of the operators for whom information was obtained estimated their net worth to be about the same level in 1958 as it was in 1950, and about 28 percent felt that their net worth had increased. About 16 percent estimated their net worth to be lower in 1958 than in 1950. Operators reporting an increase in net worth attributed this to higher land values in 1958 than in 1950, payment of debts, and types of farming changes. Most of the operators indicating a lower net worth figure at the end of the period felt that the drouth had been a definite factor causing their net worth to decline.

Even though a high proportion of farmers who estimated a decrease in net worth attributed this decline to the drouth, net worth cannot be considered as an effective means of measuring the effects of the drouth. This is particularly true because land values increased substantially during the 8-year interim.

Thus, even though a given farmer may have gone deeper in debt during the drouth years, the increased value of his property more than made up for his debt deficiency and his net worth was greater not because he had accumulated more but because of increases in land values. This was further borne out by the fact that a number of operators who estimated an increase in net worth between 1950-58 attributed it to higher land values.

Those operators who mentioned the drouth as a reason for the change in their net worth were asked if they felt that it had played a major or minor part in this change. About half of the operators who mentioned drouth considered it a major factor. In commenting on the effects of the drouth, several operators indicated that even though their net worth did not change or had even increased, they felt strongly they would have been considerably ahead of their 1958 financial position had the drouth not occurred.

## ***Special Government Farm Programs Widely Used***

Because of the general feeling that farms and ranches in drouth-stricken areas were in need of assistance, the Federal government sponsored a special drouth feed program during the 1950's in areas so designated. Mills County farmers and ranchers were qualified to participate in the Hay Purchase Program in 1952 and the Drouth Feed Program almost continuously from 1953 to April 1957.

The general consensus of field personnel conducting the interviewing (and verified by a number of business and civic leaders in Mills County) was that Federal assistance ran counter to the tendencies of Mills County farm and ranch operators. Consequently, any Federal program which involved regulation or assistance might have been expected to encounter strong resistance. However, of the 211 farm operators for whom emergency program participation data were obtained, 179 (or 85 percent) took part in some phase of the Drouth Feed Program.

On the whole, Mills County operators felt the Drouth Feed Program was helpful, although a number expressed disapproval for the way in which certain phases of the program were administered. Almost 50 percent of the operators indicated the program had been greatly beneficial to them and an additional third felt the program had been of some benefit. A few operators stated that the Government Drouth Program was the major factor which permitted them to remain on the farm. When operators were asked specifically to state the way in which the program had been beneficial, the consensus was that it had provided more feed at a cheaper price and allowed the operators to keep their stock. Only 11 operators considered the Drouth Feed Program to have been of no benefit to them.



Operators were also asked to give their overall appraisal of the Government Drouth Program. About 8 out of 10 expressed their approval. However, 42 percent of this group made some qualifying statement which indicated that although they approved the overall program, they saw some room for improvement. Ten percent of the operators disapproved of the program. Most of this group expressed the opinion that it was not well adapted to their particular farming situation. The remaining 10 percent did not take any position in reference to the Drouth Feed Program either because they had been in farming or ranching for a very limited number of years or did not care to express an opinion if they had one.

## ***Attitudes Toward Farming and Plans for the Future***

The question of whether a change in attitudes toward farming as an occupation takes place among farmers and ranchers in an area during a prolonged drouth period is of immediate concern to sociologists as well as persons in planning positions related to agriculture. Further, extended drouth conditions may also affect the plans that farmers and ranchers make for the future. Because attitudes have a direct influence on action of individuals, a series of questions was designed to determine how farmers and ranchers felt toward agriculture as an occupation or way of life.

### ***Attitudes Remained Positive***

It might be anticipated that farmers and ranchers would be less enthusiastic about farming as a means of making a livelihood after having lived under drouth conditions for several years. As the out-migration from the area discussed previously indicates, for many persons this is true. For those who remained in or entered farming during the drouth period, attitudes toward farming remained positive.

Respondents were asked to state what they specifically liked about farming or ranching. A total of 101 replied that the thing they liked the best was that they could be their own boss. Two operators felt that it was the best place to bring up their children. Only four gave "nothing" as their reply to the question concerning the things they liked about farming. Several mentioned more than one item.

A second question concerned some of the things which they disliked about farming and ranching. Items most frequently mentioned were its unpredictability, size of investment in proportion to returns, drouth, high costs of land and machinery, low farm prices and the amount of hard work in relation to income.

After being given a chance to state what they particularly liked and disliked about farming or

ranching, operators were then asked: "If you were to balance out your likes and dislikes against each other, what would you say is your overall opinion about farming at this time?" Approximately 7 out of 10 operators gave an unqualified affirmative answer. Two out of 10 indicated they were pleased with farming in general as an occupation but qualified their answers. Only 8 operators were unhappy with farming as an occupation at the time of the survey.

Only 28 farm operators reported that they felt their feeling toward farming as an occupation had changed some during the drouth years. Most of these were less enthusiastic about farming than previously and indicated that drouth was a major factor in their change in outlook. Nevertheless, even after several continuous years of drouth, most were very optimistic about the future of farming and ranching in Mills County and still felt that "there just isn't any occupation as good as farming, if we would just get enough moisture."

In order to probe deeper into their feelings about farming, the operators were asked what they would do if they had a chance to sell out at a reasonable profit and had been promised a fairly good job in town, but that it would involve moving from their farms. Only 4 percent of the 209 operators replying to this question stated they definitely would sell out under these circumstances. Seven percent replied they would have to think about it more seriously but probably would sell out under the stated conditions. Eighty-two percent stated they would definitely turn down the opportunity, while 7 percent did not care to speculate on what they would do. Thus, based on this evidence and evidence presented previously, it appears that in spite of the drouth and the number of adjustments which farm operators had to make, a large majority still preferred farming as their occupation.

To get an idea of the factors influencing some people to remain in agriculture while others left it during the drouth years, operators in the sample precincts were divided into three major groups. These included those who: (1) stayed in farming during the drouth period, (2) started farming during the drouth period and (3) moved out and back into farming during the drouth period.

About 90 percent of the operators remained in farming during the period. These were asked about the most important factors that led them to stay in farming. "We just like it" was an answer which was given to the question more than any other reason. Other reasons which rated high were "owned my land," "farmwork is only kind of work I know," and "being able to do nonfarm work at the same time."

Those farmers who started farming during the period (9 percent) did so mainly because they were

from farm backgrounds, liked farming and felt secure in it. Two operators started farming because they viewed it as a land investment, and one operator indicated he started farming as an old age security.

Only two operators moved out and back into farming between 1950-57. One operator left the farm because he "was not making a living at it" but then returned because he thought conditions might change. The other operator quit farming to go into a non-farm business and re-entered farming when he had a chance to get an irrigated farm.

An overall evaluation of attitudes of farm and ranch operators in the study area toward farming indicated general optimism and a belief that "farming is all right, and since I like it, I had just as soon take my chances here as well as anywhere else, drouth or no drouth."

### *Some Changes Anticipated for the Future*

In addition to obtaining information about what happened to farm operators and their families during the drouth years, some data were gathered about their future plans and intentions. One of the questions asked of farm operators involved plans they had for changing their farming operations in the next few years. Sixty-four percent of the operators stated they did not plan to make any change in their farming operations. Another 21 percent indicated that they planned to increase the amount of acreage operated; 10 percent were going to change management arrangements; two percent planned to reduce their size of operations and the remaining 3 percent planned to get out of farming altogether. Regardless of the type of change planned in the future, most operators indicated that they would have to wait and see if the drouth was over before attempting to carry out their plans. The seven farmers and ranchers who indicated they were planning to quit farming felt that the ending of the drouth would have little influence on their decisions. The main reasons given for quitting farming in the future were old age, poor health and low levels of profits.

Some information was also obtained relative to the future intentions of farm operators in the study area in regard to the place of their residence. Only 10 operators stated they planned within the next few years to move off the farm they occupied at the time of the field study. Of this number, two planned to move to another farm and seven planned to move to a city or village. One operator did not know where he would move but apparently felt that a move was in order. Only three operators felt that the drouth was a major factor in their desire to move from the farm which they were occupying at the time of the field study. Poor health, retirement, older age and the desire to operate a larger farm were among other reasons given by operators who anticipated a move in the near future.

## *The Post-drouth Years*

As previously indicated, Mills County underwent serious and prolonged drouth conditions from 1950 to 1957. Rainfall in 1957 was above the 55-year annual average of 27.1 inches for the area for the first time since 1945. However, much of the land had become so denuded of grass and vegetation and the surface so crusted that excessive water runoff occurred. Consequently, in order to break the drouth, rainfall had to be general and at frequent intervals to permit palatable grasses and ample moisture to build back in the soils. At the time of the field study in 1958, moisture conditions were beginning to be favorable and prospects appeared bright for a promising crop year. Rainfall data supplied by the Mills County Soil Conservation office in Goldthwaite indicated sufficient quantities and seasonal distribution of moisture for successful agricultural production during the years following 1958.

Mills County and the study area were revisited on several occasions after the 1958 survey and many changes were observed to have taken place since the end of the drouth. Several of these are readily observable even to the casual visitor while others were verified through interviews with selected individuals. The purpose of this section will be to describe some of these changes.

A readily apparent change had taken place since the conclusion of the drouth in the enthusiasm and optimistic outlook of farmers and ranchers. This was evidenced in several ways. Common replies to the question of how the people are now farming were: "There is a lot of difference now," and "People are happy and getting along fine," and "We just could not possibly want things any better." Several persons in the study area indicated that they were probably more aware of their current blessings than they would have been had the drouth not occurred.

One of the most striking changes involved the number of new homes which had been constructed since the end of the drouth. While the field study was being conducted, no new structures (either business or home) were in the process of construction. However, several new homes and additions to older homes have been completed in the last few years. Farmers with new homes indicated that they did not seriously consider building them during the drouth years although they had hoped to do so. Since the conclusion of the drouth, they felt that the present and future in general looked prosperous, and they expressed little concern over being able to pay for their new homes.

One of the largest farm machinery and implement dealers in Mills County indicated the volume of sales of new tractors and farm implements was considerably greater during the first 3 years after the conclusion of the drouth than it had been for the

previous 7 years combined while the drouth was in existence. It was his opinion that farmers and ranchers did not have the money during the drouth years with which to buy farm machinery. Since they also felt uncertain about future prospects and their ability to pay for newer machinery, they repaired old equipment and tried to make it last longer.

The new-found purchasing power of farmers and ranchers in the post-drouth years had considerable effect upon the economy of the area. One of the leading bankers in the county stated that while some loans were being made during the drouth period, they were for the most part more selective and very carefully scrutinized. By comparison, there has been a more relaxed attitude toward lending farmers and ranchers money since the conclusion of the drouth. Bank deposits in Mills County have more than doubled since favorable moisture conditions have returned, and a number of businessmen in the study area indicated that fewer farmers were currently buying goods on credit than during the drouth years. They also indicated that the unpaid balance of bills accumulated by farmers and ranchers was much lower than at any time since the beginning of the drouth. Two persons operating stores indicated that they welcomed credit for farmers up to a certain degree at the present time while during the drouth years they extended credit to farmers more reluctantly. One operator of a nonfarm business indicated that about the only farmers who had not cleared up their bills after the drouth years were those who had moved away from the area.

Churches in the study area showed a definite increase in collections and contributions since the end of the drouth. One of the churches added a very structure (educational building) to its facilities which it had delayed constructing until after the drouth was over. Membership declined in the church chiefly because of outmigration. Since the conclusion of the drouth, church membership has remained fairly stationary. Ministers indicated that they did not expect church membership to increase since persons who had moved away had transferred to other churches. Another factor considered important in potential church enrollment is the age distribution of persons left in the study area. As previously indicated, the migration of young people from the study area in such large proportions during the drouth years so depleted the number of potential younger parents that not enough youngsters are expected for population replacement.

School enrollment in the study area declined rapidly during the drouth years and has continued to decline after the end of the drouth. The Mills County scholastic population numbered 1,274 for the 1949-50 school year and 916 in 1957-58. By 1960-61 the number of scholastics in Mills County had been further reduced to 885. As in the case of church enrollments, school officials feel that the number of

youngsters and potential school pupils will not be great enough to cause enrollments to increase.

Several agricultural changes may be noted since the conclusion of the drouth. As indicated by data for the drouth years, a definite shift took place from crop production and raising of cattle and calves to the production of goats and sheep. Persons in important agricultural positions indicated that the shift toward goat production which started during the drouth years had continued after the end of the drouth. According to several agricultural officials, farmers and ranchers became aware of the advantages of goat production in Mills County during the drouth years and have continued to expand in this direction ever since. In general, goats are easier to handle than are sheep or cattle, they thrive on the vegetation which sheep and cattle will not eat and help clear up underbrush. In addition, the guarantee on mohair prices and the increased volume of mohair produced through better breeds of goats have made goats a more profitable enterprise. More land is being turned over to pasture for the goats as their numbers are expanding. The livestock auction market at Goldthwaite has developed into the largest goat auction market in the Nation. Mills County is not the largest producer of goats in Texas, ranking seventh among the counties of the State in 1959, but the successful market in Goldthwaite has attracted the business of farmers from other counties. An inquiry into the factors related to the success of the goat auction led to the operator's observation that the greatest single factor in his successful operation was the large increase in numbers of goats in Mills County and surrounding counties during the drouth and post-drouth years.

Another agricultural change taking place after the drouth was a shift away from poultry production. During the drouth years, 27 farmers in the study precincts either started in poultry production or made substantial increases in the size of their poultry flocks. Agricultural officials in the county reported that a relatively high percentage of the poultry producers who started in poultry production during the drouth years either cut back considerably in their operations or got out of poultry production altogether after the drouth was over. Discussions with some of the farmers who had considerable poultry operations during the drouth years indicated they had quit the poultry business because of low returns in relation to the amount of capital, labor and time invested, and they went into the poultry business strictly as a stop-gap measure during the drouth years. A couple of those who had gotten out expressed their viewpoint in the following manner: "We never were sold on the poultry business. We got in it because we thought it would be one way to ride out the drouth. Anyway you look at it, we never were poultry farmers and never expect to be. It was just something we tried that we will not go back to unless we have to."

Another agricultural change taking place after the end of the drouth was a shift away from irrigation. At the time of the field study in 1958, 14 operators in the study area indicated that they were irrigating their farmland. The 1959 Census of Agriculture reported only eight irrigated farms in the entire county.

Farmers and ranchers in the study area apparently expanded their efforts considerably to improve their land and other agricultural operations after the end of the drouth. According to officials of the Mills County Production Credit Association and the Soil Conservation Service, farmers particularly became more aware of the necessity for ponds and other means of holding water for a relatively long period of time. Although the number being constructed either during the drouth or immediately following it was not great, the size of ponds and tanks followed different patterns. There were apparently more tanks and ponds constructed after the drouth, but the most noticeable change occurring was that they were much larger in size than in previous years. This trend was explained as being the result of farmers having more money to invest after the drouth and also having learned that larger tanks were needed. Soil Conservation Service personnel indicated that there had been an increased interest in getting different grasses established after the drouth was over and also that a relatively large number of farmers and ranchers were carrying out planned grass-seeding programs.

An official of the Production Credit Association stated that fewer farmers were borrowing money after the drouth than during the drouth years. At the same time, the size of the average loan is now much greater. His general observation was that "during the drouth, farmers and ranchers were afraid to expand too much, but now they are more ready to risk it."

In general, those people who lived through the drouth years are now optimistic and pleased with the progress they have made since the conclusion of the drouth. One of the local officials in the study area who prepares a majority of the income tax statements for the people in his community summed up this spirit of optimism in this manner: "They used to come in here and say 'we wish we had this and that' (usually referring to a new automobile or other material possession). But now they come in here

and either say 'we bought one' or 'we are getting ready to buy it'." At the same time, he reports that it is a guarded type of optimism, and that they have not forgotten the effects of the drouth. This conclusion is based on a statement commonly heard in the study area such as: "We had better build or buy it now, because if another drouth sets in, it will be a long time before we can think about doing it again."

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