UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

DRY FARMING IN WESTERN KANSAS

A Study of 135 Farms in Sherman, Thomas, and Finney Counties. Farm Year 1922.

A Preliminary Report

Washington, D. C.

February 1925

Explanation

In 1920, several bureaus of the United States Department of Agriculture and the United States Department of the Interior adopted a general program for a comprehensive study of the agriculture of the Great Plains region.

Carrying out one part of this program during the summer of 1923, the Divisions of Farm Management and Costs and Land Economics of the Bureau of Agricultural Economics, working in cooperation with the respective State Agricultural Colleges, collected data from representative farmers in five of the Great Plains States.

Following is a summary of the information given by 135 farmers in Sherman, Thomas, and Finney counties in western Kansas. General information as to the farm business for the year ending March 1, 1923, is presented, as well as certain of the more important steps in the history of the agricultural development of the region.

Acknowledgments

It is with pleasure that the writer acknowledges his indebtedness to the various members of the field party who collected the data. Particular credit is due Professor W. E. Grimes and Professor Eric Englund of the Department of Agricultural Economics of the Kansas Agricultural College, who not only made all advance arrangements for the field work and did much of it themselves but have carefully read and constructively amended this report.

Official acknowledgment of the services rendered by the farmers who took time from their work to give the information that made this report possible is hereby gratefully made.

DRY FARMING IN WESTERN KANSAS

Preliminary Report on a Study of 135 Farms in Sherman, Thomas, and Finney Counties. Farm Year 1922.

By E. O. Wooton, Associate Agricultural Economist.

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GENERAL INFORMATION

Location and Area. Sherman and Thomas Counties are in the northwest corner of the State in the second tier of counties from the northern boundary line and in the first and second tiers of counties from the western boundary. Only that part of Finney County which lies south of the Arkansas river was visited and several records were obtained from the adjacent counties of Haskell and Gray further south and east. The farming conditions are practically the same for these counties south of the Arkansas river, and the area will be referred to as Finney County throughout this report, though the conclusions reached are not characteristic of the greater part of Finney County, which lies north of the river.

The total acreage of farms visited and reported here is as follows: Sherman County 53,367 acres; Thomas County 30,724 acres; Finney County 42,299 acres. These farms are doubtless representative of the permanently established general farming of the regions in which they lie. Sherman and Thomas Counties are part of the Central Great Plains region, but it is probable that the Arkansas river is the natural dividing line between the central and southern Great Plains. The Finney County farms are therefore representative of the extreme northern end of the southern Great Plains.

The actual distribution of the farms visited is shown in the sketch map which follows.

Soils, Native Vegetation, and Relief. No detailed studies have ever been made of the soils in this region. Studies have been made in Nebraska directly north of Sherman and Thomas Counties and in northwestern Texas south of Haskell and Finney Counties.

It is probable that the well-developed upland soil in the former two counties is identical with the Keith silt loam of Duel County, Nebraska. In all its characteristics it is practically identical also with the Rosebud silt loam covering a large part of western Nebraska. The soil in Sherman and Thomas Counties differs from the latter soil in practically no other way than the source of the material from which the soil has been derived, the difference being of theoretical rather than of practical importance.

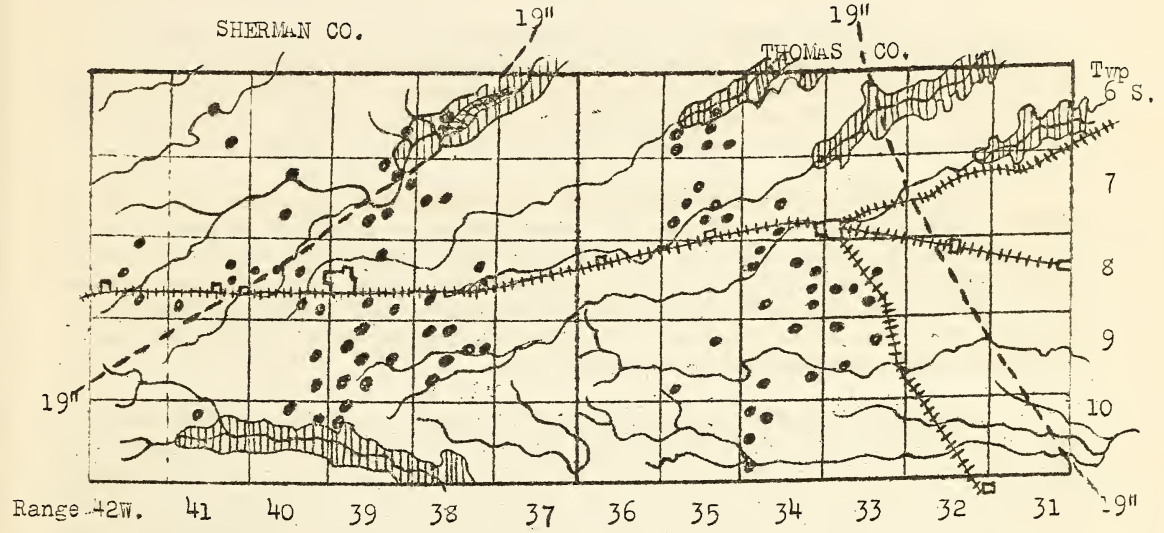
Practically all the farms in Sherman and Thomas Counties are found on this soil type. The surface soil is a loose, brown, mellow silt loam of varying depth, containing varying proportions of fine and very fine sand. The upper subsoils are usually lighter in color passing into yellow or grayish yellow almost pure silt. This is a very good agricultural soil producing good yields of wheat and fair yields of corn during favorable seasons. The soil is fine and light, and in very dry years is likely to "blow" more or less if farm practices are not so adjusted as to prevent such consequences. The farmers of Thomas County were forced to take united action to stop disastrous soil blowing in 1912 at a considerable cost in terms of money and labor.

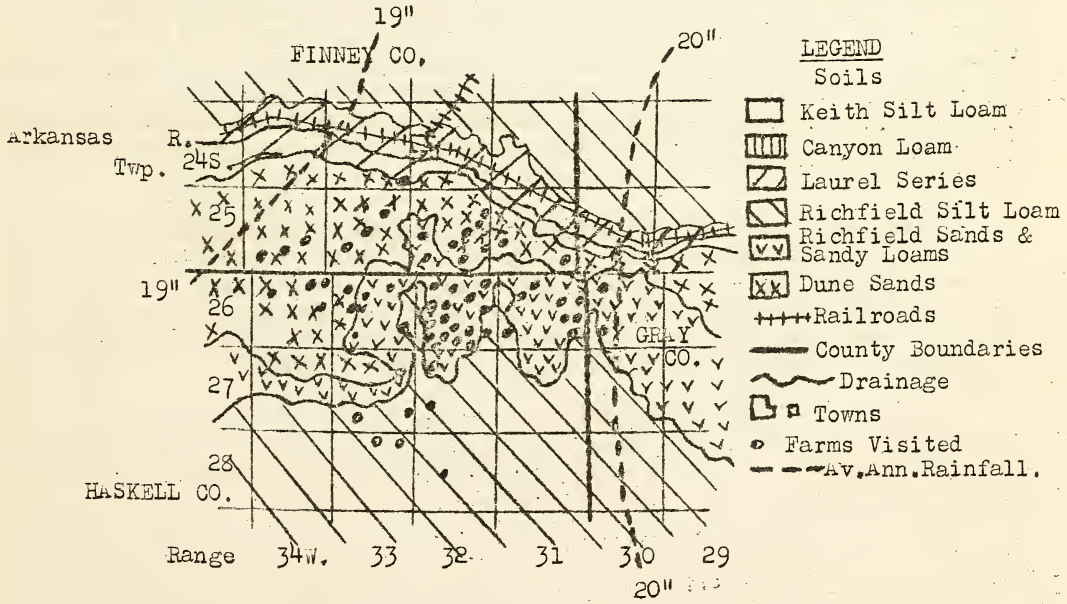
Most of these two counties are nearly level to gently rolling, except where creeks have cut their channels. Along the North Fork of Smoky River in the southern part of Sherman County there is a little tolerably rough land which is usable only as pasture. Otherwise practically all of the area of the two counties is tillable, though a large part of it is still in native pasture as it never has been broken.

The upland soils of the Finney County area are of the Richfield series as shown on the sketch map. These are good agricultural soils, though containing much sand and silt and consequently easily blown when dry. This is a very important factor in a region where annual wind motion is large and high average velocities are reached. Bordering the Arkansas river on the south side is a wide band of sand dunes where the sand is continually shifting more or less. These dunes vary in height up to 15 or 20 feet but are usually less than that and they are mostly held in place by the scattered native vegetation. They are composed of "loose sand with more or less fine soil." Among the dunes are scattered small areas of tillable land which account for the positions of some of the farms shown on the map. Most of this dune area is now held and used by cattlemen, who cultivate only a small part of the total area and run stock on the native forage plants that grow on the dunes.

Sketch Map of Areas Visited

in Western Kansas.





The Richfield soils shown in the sketch map are nearly level or gently rolling within the limits of the area studied. The sands and sandy loams are derived from underlying sandstones. All have been modified more or less by wind action, and each is reasonably fertile and yields well when there is sufficient rainfall and care is taken to prevent blowing.

The native vegetation occupying the silt loams was, and still is over a considerable part of it, the short grass association composed mostly of grama and buffalo grasses. On the dune and other sands and to a less extent on the sandy loams, the native plants are bunch grasses, sand grasses, Kansas bluestem, with some yucca, sage-brush, and herbaceous annuals usually referred to as "weeds." On the more compact areas the grama and buffalo grass association takes possession.

Altitude, Climate, Water Supply. Most of the points in all three of these counties are more than 3,000 feet above sea level. The elevation at Goodland is 3,688 feet, at Colby is 3,133 feet, and at Garden City is 2,832 feet. These elevations (in an interior continental semi-arid region) are partly responsible for the clear atmosphere, the high evaporation, and the sudden and wide variations of temperature, both diurnal and annual, that characterize the region. The wide extent of nearly-level grass-covered plain is to a degree responsible for the high rate of wind motion, as well as for the character of the storms that occur both in summer and winter. The summer storms are likely to be violent, more or less like tornadoes, frequently accompanied by heavy falls of hail which damage crops seriously. Winter storms are sometimes severe and accompanied by low temperatures. As a generalization it may be said that the distribution of the generally insufficient rainfall through the year is favorable to its best utilization by the small grains.

The season of 1922 was favorable for crops in the earlier part of the season at all three of the stations, there being an excess of rainfall above the expectation for March, April, and May. At Goodland, average or better rainfall occurred each month; at Colby the June rainfall was only slightly more than half of the average; at Garden City both the June and July rainfall were less than the average for these months.

The growing season was slightly cooler in the early part and a little warmer in the latter part, but the crop yields for the year were slightly better than those reported by the same men for several years past.

Certain climatic data that indicate the character of the weather of the general region are given in the following table. The more important temperature and precipitation measurements for 1922 and the differences between these and the long-time averages (called normals) are shown. Lines connecting points having average annual precipitation of 19 and 20 inches are shown on the map.

Climatic Date (1/)

Items	Goodland		Colby		Garden City	
	For 1922	Departure from normal	For 1922	Departure from normal	For 1922	Departure from normal
Temperature, Jan. average	25.3°	-2.3°	25.8°	-3.0°	28.9°	-1.6°
Temperature, July average	73.8°	-1.2°	77.0°	+1.3°	77.9°	+0.1°
Temperature, highest monthly average	76.4°		78.4°		79.4°	
Temperature, lowest monthly average	25.3°	-2.3°	25.8°	-3.0°	28.9°	-1.6°
Rainfall, total annual	19.88 in.	+0.98 in.	18.94 in.	+0.68 in.	16.89 in.	-2.44 in.
" , for April	5.09 "	+2.78 "	5.40 "	+3.11 "	4.85 "	+2.71 "
" , for Sept.	0.01 "	-1.50 "	2.78 "	+1.38 "	0.53 "	-1.13 "
Length of frost-free season	172 da.	+14 da.	181 da.	+22 da.	172 da.	+6 da.
Date of last killing frost in the spring	Apr. 19		Apr. 19		Apr. 19	
Date of first killing frost in the fall	Oct. 8		Oct. 17		Oct. 8	
Extreme conditions reported during period records have been kept. These occur only at irregular intervals.						
Highest temperature recorded	106°		108°		112°	
Lowest temperature recorded	-23°		-31°		-32°	
Greatest annual rainfall	30.89 in.		31.81 in.		34.81 in.	
Least annual rainfall	10.87 "		6.62 "		8.92 in.	
Date of latest killing frost	May 27		May 26		May 26	
Date of earliest killing frost	Sept. 29		Oct. 3		Sept. 7	

(1/) Figures reported by the U. S. Weather Bureau, kindly furnished by Mr. J. B. Kincer; they are for the calendar year, not the crop year. The recently calculated normals are used.

Underground water for family and stock use is found almost anywhere in the region at rather shallow depths. Nearly all the farms have wells fitted with pumps and windmills and convenient distributing systems for houses, barnyards and pastures. A few pastures have running streams or springs but these are not common.

History of Occupation. Western Kansas was first a grazing country. After most of the buffalo had been disposed of in the early seventies, and the Indians were dispersed, cattle were driven in from the south and later, when railroads were constructed, they were hauled in. Sheep in "bands" were run in this region over only part of the land for a short time and not at all on the nearly level lands of the northwest corner of the State.

In the early eighties settlers began to come into the northwestern counties, taking up homesteads and "timber" claims. (Timber Culture Act. 20 Stat. 113). A considerable portion of the land was taken up in this way, largely as speculative ventures, many of the patentees selling out for what they could get when they secured their deeds. In fact, many of what were virtual sales took the form of loans secured by first mortgage, which the land owner never intended to pay; he left the region as soon as he got the loan. Loans of this kind ranged from $300 to $600 per quarter section. Timber claim land could be bought for $1.25 an acre and homesteaded land cost the homesteader about 25¢ an acre as fees. To this must be added the cost of improvements as well as the expense arising from the residence and labor requirements of the laws under which the land was acquired. The period of settlement in the region south of the Arkansas river was considerably later.

Railroad lands throughout the region were first sold to the stockmen, and they consolidated their holdings into areas of considerable size, believing that the region could never be crop-farmed. In the opinion of some, these grants delayed the settlement of the region in which such lands lay, by crop-farmers, though they probably hastened the better utilization of the land as grazing land.

The sandy lands immediately south of the Arkansas river were set aside as a national forest in the hope that they might be forested, but experiments leading to this end failed, and the land was again thrown open to entry. It is now owned and operated mostly by cattlemen whose stock graze the native forage plants during most of the year and are fed during short periods of scanty feed on forage crops grown on the small areas of better soil that are scattered among the sand dunes.

Scattered attempts at crop-farming were made here and there by some of the early settlers and the number who were able to succeed gradually increased. Effective methods were learned and became the common practices. One-crop (wheat) farming days had about passed when the world war propaganda and high prices brought about a renewal of the earlier methods. During the high-price period the yields for the region were generally good and in some cases excellent, hence wheat farming paid well. Land prices naturally rose under such a stimulus.

With the fall in prices of wheat and other farm products the farmers were compelled to introduce other enterprises in order to make a living. Livestock production with the resulting livestock products which were salable, offered a way out of the difficulties that was followed by most of the permanently located farmers of the region. Thus came about the type of farm organization which is discussed in this report and which is believed to be the best one for the region, all things considered, under the existing conditions of agricultural development.

Farm Organization. From this short synopsis may be deduced the fact of the existence of the three principal types of farming that follow:

I. General or diversified farming. These farmers mostly own the greater part of the land they operate and are permanently located in the region. They are doubtless much more numerous than any of the other kinds.

II. Wheat farming. Such farmers are to a considerable degree renters, though some owners raise little but wheat. The risk and expense of this sort of farming is much greater for an owner-operator than for a renter because of the investment necessary. The risk for the share renter is not very great if he so words his contract that he will not be compelled to harvest a poor crop, in order that the landlord may get his share.

III. Stock farming or ranching. Most of the farms on the sand dunes are of this type, along with a few others that are "hangovers" from the time when this was the principal or almost the only method of using the land. Such ranches produce little in the way of crops except a few acres of forage or grain to be used as winter feed for the stock. Mostly such ranches produce only beef cattle, though a few have some hogs for sale.

Since general farming consists of a certain balance between the crop and stock enterprises on the farm and a considerable variety of each, changes from "one-crop" or "stock" farming to "general" farming may easily be brought about by introducing the missing enterprises and increasing the number of different varieties. Farmers of the region have appreciated this fact, hence various degrees of diversification are found on the different farms visited./1

/1 (One very striking peculiarity of such a region in its present state of development is the large amount of land owned by people who do not want to live on it and farm it. Such land rents for almost nothing, for the owner must pay the taxes and he is glad to get any return from the land, which will help defray the expense of ownership. For several reasons it is to the interest of both the renter and the owner to grow wheat upon such land, but principally because wheat is salable for cash. Some landlords require it. This factor is only incidentally mentioned here; it cannot be discussed in this paper.)

The Farmers Interviewed. Care was taken to get data from farmers who owned at least a part of the land which they operated in 1922, and who considered themselves more or less permanently established in the area. Men who rented all their land were not interviewed, not because they are not good farmers, nor because there are no important problems on rented farms, but only a limited time was available in which to get enough records to give reliable averages, and it was necessary to attempt to answer the most important questions first. Hence only owner and part-owner farmers were interviewed.

Still another reason for omitting renters is the fact that farmers who operated nothing but rented land could not answer the questions that would bring out the details of the settler's progress. He had no investment in the land he was operating and knew nothing of its history. The study of the experiences of such operators was of necessity a separate investigation.

The writer appreciates the desirability of learning what has caused failures in the region; he knows that many would-be farmers were unsuccessful and left. But it is impossible to get from present residents detailed data of the experiences of people who have left. The method used in this study gives only the kinds of generalizations set forth.

A few records of typical stock ranches (of small size) and wheat farms were obtained, thus demonstrating the correctness of the classification given on page 9 but the number of records was too small to give reliable averages, hence they were omitted. These facts demonstrate plainly the necessity of further study in the region.

Of the farms visited nearly all belong to the general or diversified type, and the tables and conclusions as set forth in this paper refer only to owner or part-owner general farms. Data as to any other kinds of farms are still too scanty to give reliable averages.

No attempt was made by the enumerators to select only the best farms; they obtained records from any permanently established man. Therefore the generalizations presented here are doubtless reasonably correct for the type of farming which is now best adapted to the region and most thoroughly established.

These conclusions are based upon average values obtained from 135 farms on which the crop and livestock enterprises were adjusted to the farms and to each other for the production of salable products, while the farm furnished directly a considerable portion of the farm family's living.

The Purpose of this Report. This is a preliminary report showing, in skeleton form, a summary of the data obtained from 135 farms in three different areas in western Kansas. It makes no pretention to completeness and discusses a single type of farming only; but that type is the prevailing one among permanently established farmers of the region and is believed to be that best adapted to existing conditions.

The information as to the 1922 farm year's business is presented from three different viewpoints, as follows:-

1. Certain of the tables are constructed on the plan used in most of the literature of farm management, that is, on a basis of "per farm" averages.

   "Per farm" averages are obtained by dividing the total value of any item (say "crop area" or "fallow land") by the total number of farms in the whole group, whether they all have the item or not. Consequently, when some of the farms do not have any of the item (say "fallow land") those farms that do have some, have a larger average amount than the indicated "per farm" average. These "per farm" values are believed to show what might be called a safe average adjustment for the region. Such tabulations are comparable to those in other similar publications, particularly of the United States Department of Agriculture and most Agricultural Experiment Stations.

   This method (and these tables) assume that the farmer receives what the farm furnishes the family as food and house rent in addition to the income shown by the figures. ("Labor income" has been omitted for reasons that are explained in footnote p. 37) Likewise it assumes that all the farms have all the enterprises, an assumption that is rarely true.

2. Hence, to give the facts as to what actually occurred on these farms, the data are shown as "per farm reporting" averages.

   These "per farm reporting" averages are obtained by dividing the total value of any item (say "tractors" or "depreciation on automobiles") by the number of farms that reported such an item, instead of by the total number of farms in the whole group. Such an average will be the same as the "per farm" average for that item when all the farms report the item, otherwise it will always be larger numerically than the corresponding "per farm" average. The number of farms reporting being given, the "per farm reporting" average tells what interest farmers who report the item actually have in such items.

   Such averages are of importance to the farmer who is carrying on such an enterprise or is in any way involved with the item mentioned. All others are not financially interested.

3. Since the value of the family living furnished by the farm is a relatively large part of the total production of the average farm each year, it is desirable to include this value in

the figure which shows what the farm has produced and what the farmer has actually received for his work and the use of his capital. Itemized per farm averages of the family living furnished by the farm are presented in Table XIV and the totals are used in Table XIX.

In Table XIX the values called "Total income of the family from all farm sources" are approximately comparable to the average yearly wage of a working man and his family, except that the farmer has been able to obtain much of his food at what might be called farm prices while the working man must buy his at city retail prices.

Besides the data concerning the 1922 farm year's business, the report treats of the changes in net worth made by these farmers during the different periods of continuous operation. These values have been corrected for receipts from and expenditures in various enterprises not connected with the farm businesses considered here. The gains or losses due to estimated changes in land values have been eliminated from tables showing changes in net worth because the estimated values of land in 1923 were believed to be too uncertain to be used with safety. Increases in land value had certainly occurred on most of the farms. Whatever such increases may have been, they were additional to the gains or reductions of the losses shown in Tables XXVII and XXVIII.

The amounts and kinds of indebtedness to which these farms are now subjected are presented in tables and discussed in the text.

METHOD BY WHICH FARMS WERE OBTAINED

Table 1. shows (1) how and when the farmers interviewed obtained their first land holdings, (2) the average size of holdings so obtained, and (3) the average first cost per acre, during each four-year period since settlement began, in each of the counties.

Table 1. When and How Each Operator's First Land Holdings were Obtained

Sherman County - 49 Farms.

Period in which original farm was obtained	Homesteads			Purchases			Relinquishments		
	No. of farms	Average size of farms	Average cost per A.	No. of farms	Average size of farms	Average cost per A.	No. of farms	Average size of farms	Average cost per A.
Before 1891	7	160	$.63				4	160	$1.26
1891 - 1900				4	280	$3.66	1	160	.73
1901 - 1904				2	513	1.42			
1905 - 1908				5	512	6.68			
1909 - 1912				2	240	9.58			
1913 - 1916				5	408	13.68			
1917 - 1920				14	422	29.56			
Since 1920				3	233	27.12			
All	7	160	$.63	35			5	160	$1.15

Thomas County - 33 Farms

Before 1891	5	160	$.47	2	160	$.78	1	160	$3.44
1891 - 1900	2	160	.80	1	160	7.50			
1901 - 1904				1	320	3.12			
1905 - 1908				4	200	11.08			
1909 - 1912				1	960	26.04			
1913 - 1916				3	160	6.56			
1917 - 1920				11	335	24.89			
Since 1920				2	640	50.00			
All	7	160	$.56	25			1	160	$3.44

Finney County - 53 Farms

Before 1891	2	240	$.20						
1891 - 1900	1	160	.19	1	160	$.88			
1901 - 1904	5	156	.22	1	160	4.38			
1905 - 1908	4	145	.20	3	160	5.96	1	160	$3.12
1909 - 1912	1	320	.56	2	240	10.52	1	160	6.25
1913 - 1916	5	281	.14	14	360	18.81	1	160	3.38
1917 - 1920				6	347	21.91			
Since 1920				3	384	28.19			
All	18			30			3	160	$4.25

Two farmers each in Sherman and Finney Counties obtained their original holdings by gift or by inheritance.

Besides the land first acquired, many of these men have acquired additional land. A few were able to increase their holdings by homesteading under some later law which allowed them a larger total area, either as a homestead or a relinquishment. Most of the increases have been made as purchases, some of the men having made several such additions to their farms.

Table II summarizes the data for such additional acquirements and shows the way the additions were made, as well as the average cost per acre to the farmer. The table does not show when the additions were made, since the farms listed in this table are the same farms referred to in table I under the corresponding periods.

Thus in Sherman County 11 farms were obtained before 1891. Table I shows that 7 of these were obtained by homesteading and 4 by buying relinquishments. Table 2 shows that of those 11 farms one farmer was able to obtain 160 acres more by homesteading and that all 11 of them purchased additional land, the average amount per man and the average cost per acre being given.

Usually such additions were made in a relatively short time after settlement, though an occasional man kept buying more and more as opportunity offered.

Table 2. How Additions to the Land Holdings Were Made and Their Cost

Sherman County - 49 Farms

Period in which original farm was obtained	By Homesteads			By Purchases			By Relinquishments		
	No. of farms	Average area of addition	Average cost per acre	No. of farms	Average area of addition	Average cost per acre	No. of farms	Average area of addition	Average cost per acre
Before 1891	1	160	$.15	11	262	$6.43			
1891 - 1900				5	318	9.61			
1901 - 1904				2	300	10.08			
1905 - 1908				5	992	17.80			
1909 - 1912				2	280	16.43			
1913 - 1916				2	780	20.88			
1917 - 1920				1	160	25.00			
Since 1920									

Thomas County - 33 Farms

Before 1891	3	160	$.63	8	700	$12.88			
1891 - 1900				3	587	12.16			
1901 - 1904									
1905 - 1908				4	400	16.28			
1909 - 1912				2	1120	14.02			
1913 - 1916				2	320	16.72			
1917 - 1920				3	427	41.80			
Since 1920									

Finney County - 53 Farms

Before 1891	1	320	$.16	2	1360	$ 1.08			
1891 - 1900				2	400	3.61			
1901 - 1904				3	580	8.35	1	320	$.59
1905 - 1908				5	446	17.14			
1909 - 1912				3	1423	11.57			
1913 - 1916				8	360	20.10			
1917 - 1920				1	160	27.50			
Since 1920									

Two of the farmers in Sherman County, three in Thomas County, and five in Finney County received additional land by inheritance or gift, the total area so obtained being 3,960 acres with an estimated value of $72,275.

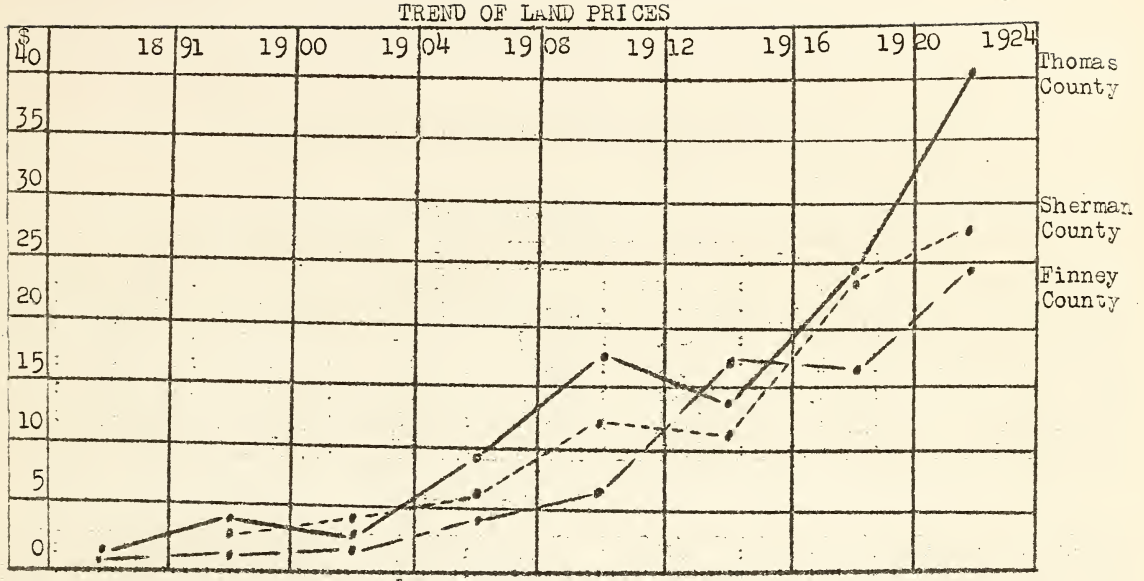
Table 3 gives the average prices paid for land obtained either as first or additional purchases made during each of the four-year periods. The figures show that there has been a rather steady rise in land prices from the settlement of the region. The slight variations from a steadily rising average price are probably due to the small number of purchases made during some of the periods and the rather wide range of prices paid. A large number of purchases in each of the four-year periods would certainly give more accurate average and possibly generally rising curves if the figures were plotted.

Table 3. Average Price Paid for Land in Each Period

Counties	Before 1891	1891 to 1900	1901 to 1904	1905 to 1908	1909 to 1912	1913 to 1916	1917 to 1920	Since 1920
Sherman	-	$2.72	$3.17	$5.81	$12.11	$11.48	$23.83	$27.59
Thomas	$.78	3.41	2.78	9.35	17.79	13.21	24.50	40.25
Finney	.28	.86	1.42	4.52	6.68	17.02	16.64	24.37

A picture of these data is presented in the diagram which follows.

TREND OF LAND PRICES



The range in prices paid by individual purchasers is naturally rather large since this depends mainly upon the judgment of the purchaser, who may be influenced by prevailing prices or may be overpersuaded by a salesman. Naturally the prices were lower in the earlier years when there was still land available for homesteading. Several of these earlier purchases were made at less than $1.00 per acre and none for more than $12 per acre. Prices paid at the height of the boom period ranged from $10.00 to $75.00 per acre.

Examination of these tables shows plainly that nearly all of the farmers are agreed that 160 acres (the area the first homesteaders obtained) and even 320 acres which could be obtained in this way after 1908, are insufficient for general farming purposes in this area heance they bought additional land. The tables also show the relative first costs per acre of land obtained in different ways, the advances that occurred in average land values between 1900 and 1923, and the periods during which land acquisition went on most rapidly in each of the counties.

SIZE OF FARM AND UTILIZATION OF THE LAND

Sizes of the separate farms in this area were largely determined by the land laws which distributed the land in "quarter section" units, most of the farms showing an acreage which is some multiple of 160. The few farms that have some other total acreage serve only to modify the average sizes.

In condensed form the facts relative to the average sizes of farms and the way the land was utilized in 1922, are shown in Table 4.

Table 4. Average Size and Utilization of Farms.

Sherman County.

Size Groups	Number of Farms	Average size of farms.	Average Acreage per farm in: Crops	Summer Fallow	Pasture	Wild hay	Waste
320 A. or less	4	290	107	-	170	4	10
321 to 640	14	552	216	14	307	2	13
641 to 960	13	868	252	11	490	2	16
Over 960	18	1844	416	28	1349	24	27
All Farms	49	1089	316	17	727	10	19

Thomas County.

320 A. or less	8	279	122	5	142	1	9
321 to 640	9	551	317	-	217	1	16
641 to 960	8	842	386	6	432	-	18
Over 960	8	2100	1183	23	862	4	28
All Farms	33	931	496	8	408	2	17

Finney County.

320 A. or less	13	281	120	8	146	-	7
321 to 640	20	507	256	10	231	-	10
641 to 960	9	803	349	11	422	5	16
Over 960	11	1934	385	51	1472	-	26
All Farms	53	798	266	18	500	1	13

The figures that show the average sizes of farms in Table 4 contain the total acreages operated. Approximately two-thirds of the farms in each of the counties contained more or less rented land and a few of the farmers let small acreages of their own land to others. The details of these renting transactions are presented in Table 5. Note that the averages are calculated on a per farm reporting basis.

Table 5. Rented Land Operated and Land Let to Others.

	Sherman County	Thomas County	Finney County
Total number of farms visited.	49 farms	33 farms	53 farms
Rented Land			
Number of farms having rented land (1)	34	21	30
Total area of rented land	17887 A.	10730A	13207A
Per cent the rented land is of total area	33.5%	34.9%	31.2%
Av. area rented land per farm having any	526A	511A	440A
Smallest amount rented on any one farm	35 A	55 A	40 A
Largest amount rented on any one farm	1920A	1920A	2560A
Number of parcels rented for cash (1)	19	9	14
Total area rented for cash	8165A	2790A	7892A
Average price paid per acre per year	$.19	$.27	$.25
Number of parcels rented on shares (1)	27	19	22
Total area rented on shares	9722A	7940A	5315A
Average value of share paid per acre in 1922	$1.33	$1.99	$2.03
Land Let to Others			
Number of farmers letting land to others	7	7	8
Total area let (2)	1324A	1936A	1293A
Average rent received per acre per year	$1.63	$2.29	$1.30
Per cent of farmers' own land let to others	3.6%	8.8%	4.3%

(1) Several of the farmers rented land both for cash and for share. Such parcels are treated separately.

(2) The area of land let to others is not included in the total area of farms as used here and in Table IV.

In all three of the counties there are only a few of the farms that contain less than a half section of land. Most of them contain a section or more and the average sizes for the three counties range from 5 to nearly 7 "quarter sections." From less than one-third to over half of the land is tilled (crops and summer fall.) a very small amount is in wild hay or waste /1 and the remainder is in pasture, which is usually the native buffalo and grama grass pasture of the region. Only about 600 acres of wild hay were cut on all these farms, the most of it being cut in Sherman County.

There was practically no "outside" pasture /2 land in use in any of the localities where records were obtained.

/1 Building and barn lots, lanes, roads, etc.
/2 Land which is not fenced, belonging to non-resident owners, railroads, state, or, public domain which may be used as pasture without charge.

In all three counties the share-rented land was mostly cropped. Some of this land yielded no return to the landlord for one reason or another. Since some of the share-rented land was not cropped and some yielded no returns the figures in Table V showing "average value of share paid per acre per year" are slightly smaller than they would be if they had been calculated on the basis of cropped acres harvested.

Nearly all of the cash rented land was used for pasture. Of the total acreage rented for cash (as shown in Table V), 553 acres in Sherman County, 169 acres in Thomas County, and 310 acres in Finney County were cropped, or only about 5 per cent of the whole area rented.

In Finney County three of the farmers rented pasturage for their stock at so much per head per month, but the acreage of land so used is not known.

CROPS GROWN AND AVERAGE YIELDS

Wheat is the principal crop raised in all three of the counties, occupying on the average 60 per cent of the crop area of the farms visited in both Sherman and Finney Counties and 77 1/2 per cent of it in Thomas County. These percentages are a little larger than those given by the State statistics for the whole of the three counties which are as follows: Sherman County 57.4 per cent, Thomas County 68.8 per cent, and Finney County 41.8 per cent. But it must be remembered that this discussion includes general farms only.

Oats are not important in the region. The total area planted on all the farms visited was only 227 acres. Barley is the small grain crop of second importance and some rye and spelt are grown.

Corn stands next to wheat when measured by the area occupied in Sherman and Thomas counties, but as yet the corn area is only a third or less of the wheat area. South of the Arkansas river the climatic requirements are met more effectively by the grain sorghums and they tend to replace corn or at least divide the field with it. What the future adjustment may be is not yet determinable. The acreages of corn and sorghum crops for the whole of Finney County bear out this statement; the total area in corn in 1922 was 11,746 acres and that in grain sorghums of all kinds was 22,429 acres.

Hay ranks as third in importance for the region. The common hay and forage plants are sorghum (usually spoken of as "cane"), millet, and alfalfa. A small amount of Sudan grass and some sweet clover are grown and their more extensive use is being recommended. A considerable acreage of native grass hay is cut each year, but this practice is gradually dying out. The yields are rather below what can be obtained from a planted crop.

The principal other crops of the region are potatoes in all the counties, and a small area of broom-corn in Finney County. Forty-four of the farms visited in Sherman County, 29 in Thomas County, and 41 in Finney County had gardens in 1922, from which they obtained some part of the family living and a few made some sales. A small area produces water melons, and the possibility of growing orchard and other trees and grape vines and decorative

shrubs without irrigation is being demonstrated on a few farms.

A considerable reduction of the wheat acreage occurred in all three counties in 1923 as well as in 1924 with a corresponding slightly greater increase of other crops. The largest increases were those of the corn acreage in all of the counties and in the acreage of grain sorghums in Finney County. This last condition may have been brought about by the extreme failure of wheat (68,000 acres planted and 6,000 acres harvested), that occurred in 1923.

Professor W. E. Grimes published an article in the Kansas State Farm Bureau Bulletin of May 1923, in which he showed that between 1911 and 1917 for every 100 acres of wheat harvested an average of 187 acres had been planted in Sherman County, 189 acres in Thomas County, and 168 acres in Finney County. The average losses for 1922 on the farms visited are shown for the different crops in Table 6, which also presents average yields.

Table 6. Area in Crops and Crop Yields
Averages per farm.

Crops	Sherman Co. 49 farms			Thomas Co. 33 farms			Finney Co. 53 farms		
	Aver. Acres Plant.	Aver. Acres Harvest.	Aver. Yield* Per A.	Aver. Acres Plant.	Aver. Acres Harvest.	Aver. Yield* Per A.	Aver. Acres Plant.	Aver. Acres Harvest.	Aver. Yield* Per
Wheat	189	173	12	335	379	10	159	152	14
Oats	2	2	12	1	1	20	2	2	17
Other small grain	33	30	9	24	19	15	14	11	9
Corn	55	55	24	49	49	23	33	33	11
Grain Sorghums	5	5	12	3	3	17	26	26	12
Hay and Forage	23	29*	2	33	31	2	29	27	1
All other crops	2	2	-	1	1	-	3	2	-
TOTALS	309	296	-	496	483	-	266	253	-

* Calculated on basis of acres harvested. Some hay was cut from land that was not planted during 1922.

Farmers were asked to give the yields obtained for wheat and corn as far back as they could remember. For the last four to six years these figures are sufficiently numerous to give fairly reliable averages. Earlier data are not very trustworthy as there were too few reports. They are given here for what they are worth. For comparison, the averages (nearest whole number) reported by the State Board of Agriculture in its Biennial Reports, for the three counties, and the corresponding United States Census figures are given. (See Table 7.)

From these figures it is seen that the farmers who gave reports were getting as good or better yields than the most reliable averages known for their counties.

Table 7. Average Yields of Wheat and Corn by Years.

Reports of Farmers Compared with State and U.S. records (1).

	Sherman County				Thomas County				Finney County			
	Wheat		Corn		Wheat		Corn		Wheat		Corn	
	Farmers Reports	State Record	Farmers Reports	State Records	Farmers Reports	State Records	Farmers Reports	State Records	Farmers Reports	State Records	Farmers Reports	State Records
1913	17(2)	5	-	-	-	-	-	-	-	-	-	-
1914	20(2)	14	-	-	15(2)	14	-	-	-	-	-	-
1915	10(2)	16	-	-	20(2)	13	-	-	-	-	-	-
1916	10(2)	13	-	-	15(2)	16	-	-	40 (2)	16	-	-
1917	5	4	-	-	18(2)	4	-	-	1 (2)	16	-	-
1918	8	7	25	11	12	6	-	-	8	9	10(2)	10
1919	9	13	10	12	11	14	-	12	6	16	13	17
1920	9	15	24	20	13	16	22	13	14	21	28	23
1921	9	11	19	14	10	7	18	12	12	12	20	21
1922	12	12	24	21	10	11	23	19	14	12	11	11
Average	9	12	24	16	10	12	22	18	12	15	15	15
	Census		Census		Census		Census		Census		Census	
1909	-	9	-	10	-	7	-	7	-	4	-	9
1919	-	10	-	11	-	13	-	10	-	7	-	11

(1) Biennial reports of Kansas State Agricultural Department, and of U. S. Census.
(2) Report from only 1 farmer.

LIVESTOCK ON THE FARMS

All the farms in all three counties have work animals and nearly all of them have milk cows and poultry. From two-thirds to three-fourths of them raise some hogs and nearly all have some beef cattle. A few of the men who raise beef cattle, and some of the hog raisers, have relatively large investments in these enterprises. Very few sheep are grown in the region.

Almost all the work animals on these farms are horses, only a few mules being reported. Most of the cattle are grade Hereford or Short-horn with but few of the dairy breeds. An occasional bull is purebred and a few herds contain purebred Red-poll cows. A few of the farm women raise ducks, geese or turkeys and several had sold the increase at good prices. Table 8 gives the details.

Table 8. Average Number and Value of Farm Animals

By farms reporting any of each kind.

Items	Number of farms reporting	Per cent of all farms	Average number (1) of animals per farm reporting	Largest number (1) on any farm reporting any	Smallest number (1) on any farm reporting any	Average Value (1) per head
Sherman County - 49 Farms Visited.						
Work animals	49	100	9	25	1	$54
Other horses and mules	42	86	7	32	1	38
Milk cows	47	96	8	28	2	42
All other cattle	46	94	29	181	1	38
Sheep (all kinds)	-	-	-	-	-	-
Brood sows	39	80	7	40	1	19
Other hogs and pigs	32	67	15	59	1	10
Chickens	49	100	135	500	37	0.71
Turkeys	5	10	6	15	3	3.
Thomas County - 33 Farms Visited.						
Work animals	33	100	10	30	4	$57
Other horses and mules	29	88	8	24	2	34
Milk cows	32	97	9	22	2	38
All other cattle	31	94	39	177	1	31
Sheep (all kinds)	2	6	33	59	7	5
Brood sows	22	67	8	50	1	17
Other hogs and pigs	20	61	8	20	1	7
Chickens	31	94	96	200	30	0.70
Turkeys	8	24	11	40	2	2.
Finney County - 53 Farms Visited.						
Work animals	53	100	9	20	3	$51
Other horses and mules	40	76	7	34	1	32
Milk cows	51	96	6	18	1	39
All other cattle	46	87	41	662	2	29
Sheep (all kinds)	-	-	-	-	-	-
Brood sows	32	60	4	25	1	21
Other hogs and pigs	26	49	11	59	1	9
Chickens	51	96	95	350	3	0.70
Turkeys	8	15	6	16	3	4.

These are not per farm averages. They are the average numbers and values on the farms that have any of the animals listed.

(1) The nearest whole number.

An examination of this table and Table 9, which gives the total value of livestock per farm, shows plainly that the farmers who were interviewed do not need to be urged to raise livestock; they all appreciate the advantages of such a policy.

The opinion was generally accepted by farmers, business men, and bankers in this area that the farmer must raise milk cows, poultry, and hogs or beef cattle, or both, and must grow feed crops to feed them, if he expects to stay in the farming business. Such a farmer becomes a good risk from the banker's standpoint, if he is not already overloaded with debts, and he has a little money all the time to pay his bills at the stores.

CAPITAL INVESTED IN THE BUSINESS

Of major importance in any business is the capital invested in it. The number of acres of land owned and the number of each kind of livestock have already been shown in Tables 4 and 7. Average values of these items as well as of other items of permanent capital, such as buildings, fences, machinery and tools, feed and supplies on hand, etc., are set forth in Table 9. These values are given as "per farm" values which are believed to be reasonable standards for farms of this type in the region.

The capital values of individual farms range from about $9,000 to over $183,000 in Sherman County, from $9,700 to $133,000 in Thomas County, and from less than $2,500 to about $108,000 in Finney County.

The percentage distribution of the capital is interesting, showing that the farms which have been settled longest have higher land values, more and better buildings, and more machinery. The Finney County area, which has been more recently settled than either of the others, shows smaller farms and less expensive improvements and equipment throughout.

Table 9. Farm Capital.

Average Values per Farm.

Items	Sherman Co. 49 Farms		Thomas Co. 33 Farms		Finney Co. 53 Farms	
	Value	% of total	Value	% of total	Value	% of total
Land owned	$23,876	71.7	$25,948	70.7	$12,436	64.4
Dwellings	1,905	5.7	2,641	7.2	1,285	6.6
Other buildings	1,589	4.8	1,906	5.2	1,015	5.3
Water Systems	350	1.1	328	0.9	312	1.6
Fences	343	1.0	384	1.0	310	1.6
Livestock	2,403	7.2	2,512	6.9	2,067	10.7
Machinery	881	2.6	1,095	3.0	781	4.0
Tractors	276	0.9	481	1.3	148	0.8
Automobiles and trucks	374	1.1	453	1.2	321	1.7
Feed and Supplies on hand	577	1.7	512	1.4	263	1.4
Crops held for sale	253	0.8	208	0.6	86	0.4
Other assets	476	1.4	222	0.6	299	1.5
Total Operator's Capital	$33,303	100.0	$36,690	100.0	$19,323	100.0
Land rented from others*	12,135	- -	12,696	- -	5,003	- -
Total Farm Capital	$45,438	- -	$49,386	- -	$24,326	- -

*For detailed data on rented land see Table 5 Page 19.

From Table 9 it may be seen that by far the greater part of the farmer's capital investment is in his land. Since very little land was being sold at the time the data were collected, the values shown in the tables are merely the best estimates obtainable. It is rather well recognized now that most land values were somewhat inflated at that time, and it is probable that the values given here are fairly high when the earning power of the land is considered.

Values placed upon other capital investments, such as buildings, machinery, and livestock, are more nearly accurate. In Sherman County these other items of investment averaged about $9,500 per farm; in Thomas County they averaged about $1,200 more and in Finney County about $2,500 less than that amount.

The average value put upon their own land (not including improvements) by the farmers was $32 per acre in Sherman County, $39 in Thomas County, and $22 in Finney County. The corresponding estimates for the rented land were $33, $39, and $20.

As is indicated in the heading, Table 9 is calculated on a per farm basis. An examination of the individual items in the table shows that

practically all the farmers had capital invested in land, buildings, fences, water systems. An occasional farmer, who gave a record, used the buildings on the land that he rented and had none or few on his own land. A few had poor fences; some had springs instead of wells. Most of the water systems consisted of wells of some depth with windmills, tanks, distributing pipes, etc. These always represent a considerable investment, sometimes running over $1,000, when the wells are deep.

All the farms had machinery and livestock and some feed and supplies on hand. But the per farm average values of investment in tractors, trucks and automobiles are not very important, except in getting the average total capital investment. In Sherman County only 17 of the 49 farmers had tractors; in Thomas 8 of the 33 farmers had tractors, and in Finney County 11 farmers out of 53 had them. The consequence of this distribution is that the men who had tractors had on the average a considerably larger investment in such machinery than is indicated in Table 9, and the other farmers had nothing invested in such machines. The average investment in tractors by men who had them was as follows: Sherman County $796, Thomas County $1,986, Finney County $714. (The Thomas County average is high because of one very large "motorized" farm).

The difference between the per farm average and the average based upon the number of actual owners is not so great for automobiles, and several of the farmers have trucks in addition. The number of automobile owners on the 49 farms visited in Sherman County is 38 with an average investment of $482. For Thomas County the corresponding figures are 29 and $515; for Finney County they are 41 and $416. Two tractors and four automobiles were discarded as useless and without capital value at the end of the year.

FARM RECEIPTS

Farm receipts may originate in several ways. Sales of crops, livestock, or livestock products are the sources generally thought of first. But a considerable number of farmers do farm work for their neighbors, or rent teams, machinery, pasture, or buildings, and not a few temporarily carry on some other kind of work for which they receive pay. Increases in the inventory value of feed and supplies or of livestock on hand at the end of the year are really credits to the farm for the year's business, as is the value of crops on hand that will be sold, though such returns for the year's business are frequently overlooked in the estimates that farmers sometimes make instead of keeping books.

It is customary in most studies of this kind to report net increases in value from all livestock transactions (that is purchases, sales, losses, slaughter, and increases in numbers by birth) as "receipts" from livestock. In a similar manner net increases of inventory value of feed, seed, and supplies on hand are reported as "receipts." This usage extends the meaning of the word "receipts" to that of "credits," but the expression has become well established in the literature of the subject in this technical sense, and with this definition is as good as any other. The usage is followed here.

In Table 10 is found a summary of the operator's receipts from various sources shown as per farm averages. The table does not contain any figure representing the wages received by the operator for his work either as a workman or as manager. There is no way to get this value except as an estimate from the farmer himself. This estimate is shown in Table 18 along with the average income which the farms returned. It is an operator's receipt, but a farm's expense and would appear on both sides of the account.

The table is named "operator's receipts" in this study because it is desired to compare operator's incomes rather than total farm incomes. For all share-rented land included in these farms, only the operator's share of the crop is considered in any of the tables, the landlords share having been deducted from the total. It is necessary to handle the operator's account in this way because landlords' receipts, expenses and capitalization were not obtainable, hence complete "farm" values for "capital" "receipts" and "expenses" could not be calculated for all farms having rented land.

The "cash receipts" shown in Table 10 include only the actual cash received for crops, livestock, and livestock products sold, plus cash wages received for outside work. The "total receipts" of this table show net increase in value for the "livestock" and "feed, etc.", which takes account of sales, purchases, increase and decrease in numbers and values for the year, in each of these items where an inventory is necessary. The capital value of these items, shown in Table 9, is the value of the products on hand at the end of the year. The net increase in value made during the year, taking account of all transactions, is shown in Table 10 among the operator's receipts.

Table 10. Operator's Receipts.

Average Amount per Farm.

Sources of Receipts.	Sherman Co. 49 farms: Amount	Per cent of total	Thomas Co. 33 Farms: Amount	Per cent of total	Finney Co. 53 Farms: Amount	Per cent of total
Crops	$1686	47.	$2807	63.	$1887	62.
Livestock	833	24.	832	19.	564	19.
Livestock Products	319	9.	263	6.	274	9.
Increase of Feed, Etc.	183	5.	96	2.	65	2.
Outside Earnings	285	8.	210	5.	156	5.
Crops held for sale	253	7.	208	5.	86	3.
Total Receipts/1	3559	100.	4416	100.	3032	100.
Cash Receipts/1	3027	--	4307	--	3134	--

/1 See explanations in preceding paragraphs. Note that the value of the family living furnished by the farm is not included in this table. It is shown in Tables 14, and 15 and used in Table 19.

A more itemized statement of the operator's cash receipts from the first three sources of income as given in Table 10 is presented in Table 11 which follows. This Table (11) shows the number of farmers who received cash from the sales of the products listed, the amount of the commodity sold, and the average price received per unit of commodity. The figures showing the total receipts from each source for all the farms visited are approximate measures of the relative importance of the different salable commodities in the region.

Table 11. Sales of Farm Products

Averages are by number of farms reporting such sales.

Items sold	Sherman County – 49 Farms: No. of farms selling	Sherman County – 49 Farms: Total amt. or number sold	Sherman County – 49 Farms: Av. price rec'd	Sherman County – 49 Farms: Total value	Thomas County – 33 Farms: No. of farms selling	Thomas County – 33 Farms: Total amt. or number sold	Thomas County – 33 Farms: Av. price rec'd	Thomas County – 33 Farms: Total value	Finney County – 53 Farms: No. of farms selling	Finney County – 53 Farms: Total amt. or number sold	Finney County – 53 Farms: Av. price rec'd	Finney County – 53 Farms: Total value
CROPS												
Wheat	40	71580 bu.	$ .92	$65802	29	90890 bu	$ .94	$85814	42	90398 bu.	$ .97	$87388
Other small grain	13	8066 "	.50	4015	5	1733 "	.85	1479	4	558 "	.70	391
Corn	23	11436 "	.58	6681	10	7240 "	.62	4522	8	4508 "	.68	3072
Grain sorghums	10	1873 "	1.20	2239	3	580 "	1.26	734	17	5241 "	.74	3854
Hay (all kinds)	6	323 T.	6.12	1977	1	3 T.	8.00	24	4	237 T.	6.06	1437
Potatoes	10	691 bu.	1.13	783	1	20 bu	.80	16	3	48 bu.	1.33	64
Beans									1	180 lbs	.02	4
Fruit, etc.	3			970								(1)260
LIVESTOCK												
Horses and mules	15	53	$45.47	$2410	7	22	$53.86	$1185	13	28	$62.50	$1750
Milk cows	17	72	29.30	2110	6	51	26.35	1344	14	34	34.53	1174
Other cattle	33	635	28.41	18040	28	603	36.65	22103	43	1125	28.56	32133
Swine (all ages)	36	853	14.47	12344	30	621	13.67	8483	32	629	11.84	7446
Poultry	31	1746	.77	1347	19	1182	.70	828	35	2672	.73	1955
LIVESTOCK PRODUCTS												
Butter	11	4445 lbs	$.37	$1665	4	919 lb	$.49	$ 449	15	2806 lbs	$.33	$ 919
Butterfat	33	24338 "	.31	7588	27	19324 lb	.30	5753	32	17332 "	.32	5478
Milk												
Eggs	48	27347 doz	.22	6057	29	9770 doz	.20	1931	45	16638 doz	.19	3221
Beef	1	240 lbs	.08	19	4	1195 lb	.10	119	7	31400 lbs	.14	(2)4358
Pork					2	3496 lb	.09	318	4	1946 "	.10	204
Miscellaneous(3)	5			210	6			105				35

(1) Five farmers raised broom corn for which they received $3,525. The average price per ton was $151.

(2) One farmer made a business of butchering and peddling meat. This accounts for the large amount of beef sold and the relatively high price. The usual farm price is 10¢ per pound.

(3) Hides, breeding fees, etc.

More detailed figures for poultry and dairy products will be found in Table 12.

Table 12. Poultry and Dairy Products.

Per Farm Averages.

	Sherman Co. 49 Farms	Thomas Co. 33 Farms	Finney Co. 53 Farms
Number of hens on the Farm (1)	131	93	95
Number of chickens sold (1)	36	36	50
Number of chickens used (1)	71	74	70
Total value of chickens sold & used (1)	$68	$67	$77
Number of eggs sold (doz.)	558	296	314
Number of eggs used (doz.)	193	224	206
Total value of eggs sold & used	$162	$102	$100
Number of cows milked	8	9	6
Weight of butter sold (lbs).	91	28	53
Weight of butter used (lbs).	118	110	110
Total value of butter sold & used:	$76	$56	$53
Weight of butter fat sold (lbs)	497	586	327
Weight of butter fat used (lbs)	38	21	21
Total value of butter fat sold & used	$168	$181	$108
Market milk sold (gal).	-	-	-
Market milk used (gal).	346	394	342
Total value of market milk sold & used	$57	$80	$66
Value total dairy products per cow	$35	$29	$38

(1) Includes ducks, turkeys and geese.

This table accounts for the total amount of poultry and dairy products produced on all the farms, the averages shown being on a "per farm" basis.

Work done off the farm has been mentioned as a source of income (See Table 10, "Outside earnings"). Such work is usually some form of farm work in which the operator supplies his teams and equipment as well as his own labor to help a neighbor. Or he may make his tractor or separator pay for itself by using it for hire, as when using his tractor for hauling grain. A number of men make a practice of doing road work when their teams or tractors are not busy, and some make contracts to perform such work as needed. Such work is referred to in the table below as farm and road work.

There are other men who work at trades of some kind, such as carpenters, and blacksmiths, for longer or shorter periods. An occasional farmer receives pay for services as a township assessor or as a county commissioner, or in other official capacity. Occasionally some buildings or pastures are rented or insurance is received for damage from hail, insect pests, or disease. Table 13 summarizes the data.

Table 13. Receipts for Work off the Farm and Other Outside Sources

Average amount per farm reporting.

Counties	Farm and Road Work		Other Services, Rent, Insurance, etc.	
	No. of men reporting	Average amount received	No. of men reporting	Average amount received
Sherman	18	$442	9	$667
Thomas	13	$207	8	$527
Finney	22	$187	13	$229

Another important source of income is the food and rent furnished to the family by the farm. The amount of this income varies considerably with the number of persons in the family, the amount of farm products they use, and the value of their dwelling houses.

In most of the publications which treat of farm business it is assumed that these items of family living have been furnished in addition to the income from the farm considered as a business, and the value of these items is omitted from the "total receipts" tables. This practice is followed here so that the figures may be comparable to other published figures.

But from the standpoint of the total productivity of the farm for a year, it is necessary to include this item, which is really one of major importance. An itemized summary of the value of the family farm living is shown as per farm averages in Table 14.

Table 14. Farm Products Used by the Family

Per Farm Averages

Items	Sherman Co. 49 Farms		Thomas Co. 33 Farms		Finney Co. 53 Farms	
	Value	Per cent of total	Value	Per cent of total	Value	Per cent of total
Dairy and Poultry Products	$199	32.1	$214	29.1	$190	38.0
Meat - Beef and Pork	68	11.0	86	11.7	75	15.0
Garden vegetables & potatoes	59	9.5	42	5.7	37	7.4
Orchard and other fruits	7	1.1	-	-	-	-
Other products, flour, beans, etc.	1	.2	5	.7	1	.2
House rent (1)	286	46.1	389	52.8	197	39.4
Total	$620	100.0	$736	100.0	$500	100.0

(1) The house rent is estimated from the value of the house, its taxes, upkeep charges, and insurance.

Since there is a considerable diversity of practice among farmers as to what they get from the farm and how much they get of each item which the farm furnishes, Table 15 has been prepared to give a picture of this distribution in the different areas visited.

Table 15. Distribution of Farm Products used by Family

Number of farm families using indicated amounts.

Value of products used	Dairy and poultry products	Meat: beef and pork	Garden produce and potatoes	Orchard and other fruits	Other products: flour, beans	House rent
Sherman County - 49 Farms						
Nothing	-	6	2	40	46	-
$1 to $50	1	11	24	7	3	4
51 to 100	8	23	17	1	-	7
101 to 200	26	7	5	1	-	14
201 to 300	7	2	1	-	-	6
301 to 400	1	-	-	-	-	3
Over 400	6	-	-	-	-	15
No. of farms using any	49	43	47	9	3	49
Av. value per farm using	$199	$77	$61	$36	$24	$286
Thomas County - 33 Farms						
Nothing	-	2	5	33	29	-
$1 to $50	-	8	18	-	3	-
51 to 100	6	12	8	-	1	3
101 to 200	14	9	2	-	-	6
201 to 300	7	1	-	-	-	5
301 to 400	3	1	-	-	-	7
Over 400	3	1	-	-	-	11
No. of farms reporting	33	31	28	None	4	33
Av. value per farm reporting	$214	$92	$50	-	$40	$389
Finney County - 53 Farms						
Nothing	-	4	13	53	49	-
$1 to $50	2	12	31	-	4	7
51 to 100	7	25	6	-	-	10
101 to 200	23	11	2	-	-	13
201 to 300	12	1	1	-	-	7
301 to 400	7	-	-	-	-	7
Over 400	2	-	-	-	-	8
No. of farms reporting	53	49	40	None	4	52
Av. value per farm reporting	$190	$81	$49	-	$13	$216

FARM EXPENSES

Farmers do not need to be told that expenses are of as much and sometimes of greater importance than receipts. The ordinary cash expenses for materials used and services rendered as well as cash paid for land rent, taxes, insurance, and repairs are here summarized under the one heading of "current expenses." Share rent paid has been left out of the calculations by reporting the net instead of the gross receipts from such transactions. Farmers are usually well aware of the amounts of all such drains upon their business.

But decreases in inventory value of either feed and supplies or livestock, and all depreciation charges on buildings, machinery, or automotive equipment are likely to be overlooked, although they are very real debits to the business, because they usually do not involve the expenditure of money. This condition is very likely to arise if the farmer judges of his financial status by his checking account only.

Following the custom before referred to (p. 26 under receipts) all such decreases in net inventory value for livestock, feed and supplies, etc., as well as depreciation charges upon buildings, machinery, and equipment generally are here included in the operator's expenses.

Table 16 gives a summary of the operators' average expenses on a per farm basis, for each of the three areas visited, and shows the relative importance of each item of expense as a percentage of the total.

Since none of the landlords paid any of the operating expenses except the taxes on their own property, it follows that the operators' expenses are practically the same as the total farm expenses on these farms.

Table 16. Operator's Expenses

Per farm averages

Items	Sherman County 49 Farms		Thomas County 33 Farms		Finney County 53 Farms	
	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total
Current expenses	$1,669	78.4	$2,398	78.0	$1,534	78.6
Livestock decrease	2	0.1	1		33	1.7
Depreciation on buildings, etc.	162	7.6	192	6.3	119	6.1
Depreciation on machinery, etc.	96	4.5	125	4.1	78	4.0
Depreciation on tractors	69	3.2	141	4.6	39	2.0
Depreciation on autos	103	4.8	156	5.1	91	4.7
Decrease in feed and supplies	29	1.4	57	1.9	57	2.9
Total Farm Expenses	$2,130	100.0	$3,070	100.0	$1,951	100.0

These expenses need the same analysis as that given under capital, with respect to the depreciation charges against tractors, automobiles, and trucks. Net losses in inventory value of livestock and feed and supplies are shown as expenses for the same reason that net gains are shown as receipts in Table 10. Only one farm each in Sherman and Thomas Counties reported decreases in value of livestock, the amount being respectively $106 and $25. But 6 of the farms in Finney County show an average decrease of $294. However, 90 per cent of this total decrease for the six farms occurred on one of them as the result of delayed sales, hence the item is really of small importance.

More of the farms showed decreases in inventory value of feed and supplies at the end of the year. The number of such farms and the average amount of decrease by counties is as follows: Sherman County 10 farms, $138; Thomas County 10 farms, $188; Finney County 25 farms, $120.

Among the 49 farmers of Sherman County, 17 were subject to depreciation charges on their tractors amounting to an average of $196. Corresponding figures for Thomas County were 9 farmers and $518, and for Finney County they were 12 farmers and $172. (See note after capital value of automotive machinery, p.

The actual number of automobile and truck owners, with the average depreciation charges sustained for each of the counties were as follows: Sherman County 40 owners, average charge $135; Thomas County 29 owners, average charge $178; and Finney County 43 owners with an average charge of $112.

To bring out more clearly the nature of the actual cash expenditures of the farmer in contradistinction to the "farm expenses" previously shown and to show which items are the more important, Table 17 has been prepared. It shows not only the average amount of money expended by those who paid a given kind of expense, but the number of men who had such an expense, and its relative importance among farmers of this area. This table also shows in detail the nature and amount of most of the items listed in Table 16 as "current expenses." It does not contain the charge for family labor which was not paid for in money.

One other important item of cash expenditure is the interest paid upon borrowed money. This item is not included in Table 16. The interest charge shown here is that part of the returns of the business which must be paid for the use of that part of the capital investment which does not belong to the operator. It is a cash outlay of the operator but not an expense of the business. It is in effect that part of the net income of the business which the operator pays to his business partner.

Table 17. Operator's Cash Expenditures. (1)

Analysis of the current expenses - interest on borrowed capital appended.

Items of Expenses incurred,	Sherman County			Thomas County			Finney County		
	No. of Farms Reporting	Total Amount Reported	Av. Amt. per farm reporting	No. of farms reporting	Total Amount Reported	Av. Amt. per farm reporting	No. of farms reporting	Total Amount Reported	Av. amount per farm reporting
Feed and seed bought	48	$4,569	$95	31	$4,137	$133	50	$7,623	$152
Cash rent (2)	34	1,653	82	12	1,788	149	17	2,221	131
Tractor, Auto or Truck(3)	41	10,103	246	29	10,197	352	44	8,252	188
Repairs (4)	46	3,657	80	31	4,315	139	51	4,496	88
Labor (5)	41	20,481	500	28	18,316	654	46	14,037	305
Threshing (6)	41	10,138	247	27	10,264	380	43	8,327	194
Insurance (7)	32	3,453	108	30	4,665	156	43	4,720	110
Taxes (8)	49	9,540	195	33	5,515	167	53	11,618	219
All others (9)	49	8,479	173	32	11,679	365	53	10,081	190
Interest on borrowed capital (all kinds)(10)	31	12,499	403	24	13,694	570	32	6,889	215

(1) Does not include expenditures for new buildings, machinery, livestock, etc., which become part of the permanent capital invested in this business. The sum of all these items calculated to a per farm basis is less than the current expenses of the preceding table by the amount of the unpaid family labor and the interest on borrowed working capital.

(2) Cash paid for rent of land or for pasturage of stock.

(3) Expenses of running and repairs (no interest charge).

(4) Repairs of buildings, fences, water systems and machinery (not including tractors, automobiles, and auto trucks).

(5) Hired labor and its board (not including unpaid family labor nor board of threshing crews).

(6) Cost of threshing and board of threshing crew.

(7) Insurance of all kinds; on buildings, livestock and crops.

(8) Taxes of operator only, on real estate and personal property.

(9) All other cash expenses (e.g. - grain hauling, commissions on livestock sales, machine work hired, etc.) except

(10) Interest paid by the operator on borrowed capital used in this farm business.

A study of Table 17 shows that about 95 per cent of the farmers (94 per cent to 98 per cent) spent money for the purchase of feed or seed and for repairs of buildings, fences, machinery, etc., but the average amounts expended for these purposes were not large.

About 85 per cent of the farmers (81 per cent to 87 per cent) hired farm labor for various purposes and also hired the threshing done. The farm labor charge includes the cost of harvest labor which is its most important item. These two are the largest and next largest single items of expense for the farms that bore them. Combined (they really form a single expense but are separated for convenience of analysis) they constitute from 30 to 40 per cent of the average total cash expenses of the farms visited (Sherman County 42.9 per cent, Thomas County 40.4 per cent, Finney County 31.6 per cent).

The expense which averages third in size is that necessary for use and upkeep of automotive machinery, which occurred on about 85 per cent of the farms (83 per cent to 88 per cent). Most of the tractor and truck owners also own automobiles. It naturally follows that men having trucks or tractors or both, as well as automobiles, have large expenses, while the farmer with a small automobile which he uses only occasionally has a small expense bill to pay for its use. The average expense is high for all three counties because there are a few large farms that are more or less "mortorized."

Taxes, which were of course paid by all, come next in importance among current expenses. The relationships between the average amounts of taxes paid and the average operator's capital values (See Table 9) of the farms in the different areas are suggestive. Using the average taxes paid and the corresponding average values for operator's capital, comparable average rates may be calculated. They are: Sherman County 5.86 mills per dollar, Thomas County 4.68 mills, and Finney County 11.33 mills. These rates are of course not the true rates, but they offer a means of comparison that indicates the need of further study which cannot be taken up in this report.

Below the double line in the table is shown the number of farmers who pay interest on "borrowed capital" /1 in each of the areas, and the total and average amount of interest paid for the use of such capital. This is a heavy expense for the men who must bear it and they constitute over two-thirds of all the farmers visited.

/1 This item called "borrowed capital" consists of loans on real estate or chattels and is usually secured by a mortgage of some kind. It really is a part of the capital which belongs to some one other than the operator. The interest charges on such loans must be paid out of the year's income. This item does not include the interest on "borrowed working capital" which is paid as a part of the "current expenses." (See Tables 21, 23 and 24.

Another item which accounts for the outlay of cash and is often included as an expense, but is really an increase in capitalization, is the money paid out in the purchase of livestock. This item is cared for in the accounting, as used in this report, by including the net increase in value of livestock on some farms as receipts and the net decrease on others as expenses. But the man who "keeps books with a check book" will have difficulties with all expenditures which are really increases in capitalization.

There were 30 farmers in Sherman County who spent an average of $174 in the purchase of livestock, the amount of the expenditure ranging from $12 to $1030 for the individual farmer. For Thomas County these figures are 27 farmers average $215 ranging from $25 to $2,920. For Finney County there are 44 farmers at $462 ranging from $10 to $6,040. Very little expenditure was incurred in the purchase of new machinery, new buildings, or new improvements by any of the men in any of the areas, as such expenditures were postponed to a more favorable season.

FARM INCOME

In most of the literature of the subject the difference between the "total farm receipts" and the "total farm expenses" is called the "farm income." If any of the land is rented the "farm income" is the sum of the "operator's income" and the "landlord's income." In this report we have been considering the operators only. Some of these operators have used only their own land; in such cases the operator's income is the same as the farm income. Certain of the farmers operated additional land rented either for cash or a share of the crop. With such men the operator's receipts and expenses, and consequently his income, are not the same as those of the whole farm which he works. The landlord's part of the transaction has been omitted from nearly all of the data presented here. Only the estimated value and the amount of land rented to the operator have been shown - Tables 5 and 9.

The operator's income is the net amount he receives for his year's work and the use of whatever capital may be invested in the part of the farm and its equipment which he claims as his own. It must be remembered that he gets the part of the family living furnished directly by the farm in addition to this "income". (See Tables 14 and 15).

This income of the operator must pay him for his labor and management and pay interest on his capital investment. If the capital investment is partly borrowed capital he will have to pay the interest charge upon such loans first, and take what is left as pay for his work and his own investment. If there is nothing left for him after paying this interest charge, one of two things has occurred: (1) because of a poor season, bad management, or other cause the farm has not yielded what it may be reasonably expected to earn, or (2) the business is over-capitalized and the man who holds the mortgage really owns the farm. In the second case the operator's own capital has been unwisely expended and all the wages he got for his year's work was the living the farm furnished directly to the family.

If the farmer really owns his farm, all the income comes to himself, to be divided as he sees fit between wages and interest. If he allows the current rate of interest on his investment the remainder may be claimed as wages for himself (usually called the "labor income" of the operator). /1

If he allows himself such wages as he thinks he is worth, the remainder becomes the interest on his capital and the rate may be calculated.

Table 18 gives the average value per farm of the operator's income and related data.

Table 18. Operator's Income, Rate of Interest Earned, Etc.

Average per farm

Items	Sherman County	Thomas County	Finney County
Operator's income from farm operated	$1,429	$1,347	$1,081
Estimated value of operator's labor	701	721	661
Interest earned on operator's capital /1	728	626	420
Operator's capital investment (See Table VIII)	33,303	36,690	19,323
Rate of interest earned	2.2%	1.8%	2.2%

/1 The capital values used here are the full value of the property, equipment, etc., from which indebtedness has not been deducted.

FAMILY INCOME

Some of the farmers had borrowed money and had to pay interest on it. These charges must be paid from the operator's income. But the farmer did not pay for the labor of the members of his family, hence the actual amount of cash received by the farmer is as much greater than the operator's income as the amount charged against the year's business for this family labor.

If we deduct the "interest paid" from the "operator's income" and add the "family labor" charge we will get what the farmer actually has with which to pay the family's expenses. If now we add the value of food and rent furnished by the farm (calculated to a per farm basis from Table 13) we have the net income of the farmer and his family from all farm sources. These data shown as per farm averages are presented in Table 19.

/1 "Labor income" is omitted from these tables: (a) because it is so liable to be misinterpreted and given more weight than it deserves and (b) because, in the opinion of the writer, the capital values obtained in this study (particularly the land values) are too high, and the current interest as quoted by the banks (8%) is higher than most farmers are paying and higher than most money earns in these areas. Therefore the calculated interest charge on capitalization is entirely too high and labor income would be correspondingly low; hence, to that degree, incorrect. It is not proper for the writer to substitute his individual judgment in such a case and a method of applying a correction is wanting, hence the labor income figures are omitted from the tables. The data for calculating them, such as they are, will be found in the tables given.

Table 19. Amount Available for Operator's Family

Average per farm.

Items	Sherman County	Thomas County	Finney County
Operator's income from farm	$1,429	$1,347	$1,081
Interest paid on borrowed capital	255	415	130
Amount remaining after payment of such interest	1,174	932	951
Family labor charged as an expense but not paid for	202	250	187
Available for family	1,376	1,182	1,138
Family living supplied by farm (1)	620	736	500
Total income of the family from all farm sources	$1,996	$1,918	$1,638

(1) Includes house rent. (See Table 14).

The figures used in Table 19 for interest on borrowed capital and unpaid family labor are per farm averages. Since only part of the farms were affected by these debits and credits it is necessary to show the actual distribution and amounts of each. These data are presented in Tables 20 and 21. The averages given in these two tables are not "per farm" averages but are "per farm reporting" such subtractions from and additions to the amount available for the family.

Table 20. Interest Paid on Borrowed Capital.

Number of operators paying indicated amounts.

Size Groups	Sherman County		Thomas County		Finney County	
	No.	Average amount	No.	Average amount	No.	Average amount
$ 0 to $100	7	$ 66	3	$ 53	10	$ 56
101 to 200	3	148	6	154	8	149
201 to 400	12	300	3	230	10	275
401 to 800	5	546	9	571	4	597
801 to 1600	3	1175				
Over $1600	1	1738	3	2259		
Average of all	31	$ 403	24	$ 571	32	$215

Table 21. Expenses for Family Labor Charged but not Paid.

Number of farms charged with indicated amounts.

Size Groups	Sherman County		Thomas County		Finney County	
	No.	Average amount	No.	Average amount	No.	Average amount
$ 0 to $100	7	$ 49	1	$ 90	2	$ 50
101 to 200	5	133	2	165	5	162
201 to 400	6	313	6	301	5	290
401 to 800	7	550	5	504	10	574
801 to 1600	3	1053	3	1170	2	900
Over $1600						
Average of all	28	$ 354	17	$ 486	24	$ 412

The figures for operator's income in the different areas that are used in tables 18 and 19 are correct "per farm" averages and are good in their places. (See p. 11 on per farm averages) But an arrangement of the individual incomes so as to show the number of operators who made negative (-) incomes (that is those whose farm business was run at a loss in 1922) as well as those who were more or less successful (positive incomes) and the degree of their successes and failures will throw much light on the actual conditions existing in these areas.

These data are presented in Table 22.

Table 22. Distribution of Operator's Income

Number of farms producing incomes of indicated sizes.

Size Groups	Sherman County		Thomas County		Finney County	
	No.	Average amount	No.	Average amount	No.	Average amount
- $1601 or less						
- 1600 to -801	2	$ -867	2	-972	1	-1478
- 800 to -401	6	-485			4	- 657
- 400 to -201	4	-279	1	-233	3	- 278
- 200 to -101	2	-142	1	-160		
- 100 to 0			2	- 28	2	- 36
Average of all negatives	14	-432	6	-399	10	- 501
$ 0 to $100	1	95	2	64	1	21
101 to 200	1	122	1	200	3	154
201 to 400	1	297	3	382	5	282
401 to 800	1	414	4	509	9	571
801 to 1600	14	1061	7	1087	9	1144
1601 to 3200	11	2331	7	2029	13	2302
3201 to 6400	4	4899	2	3768	3	5013
Over $6400	2	8719	1	13908		
Average of all positives	35	2173	27	1735	43	1448
Average of all	49	1429	33	1347	53	1081

Table(22) shows that 14 of the farms in Sherman County (or 29% of all) were operated at a loss in 1922. In Thomas County 6 (or 18% of all) were in this class, while in Finney County there were 10 such farms (19% of all). The average amount of net loss is shown (the quantities with negative signs). All that these operators got for their year's work was what the farm furnished the family, and some of them had to borrow money in order to stay on the farm and work it.

The reverse of this rather sad picture is seen in the other half of the table where 31 (63%) of the Sherman County farmers, 19 (61%) of the Thomas County farmers, and 25 (47%) of the Finney county farmers are shown to have made over $800, besides the family living from the farm. (Note that the average value of the operators services as estimated by themselves is less than $725 per year. See Table 18).

An analysis of the figures for the individual farms (not given in the tables) shows that three farmers in Sherman County, three in Thomas County, and 10 in Finney County made (a) the living furnished the family by the farm (b) 8% on their capital investment, and (c) $725 or more wages for himself. Several of these men made as much as $2000 wages. Taking the three counties together, 12.6% of all the farmers made all and more than could be expected of an ordinary business and did it during a year that was recognized as an unfavorable one. This speaks well for the farming possibilities of the region. It shows that farming can be profitably pursued by men who actually know how to conduct the business.

It must also be remembered that 8% is a high rate of interest for farm property to earn and that capital values as given are high because of the land prices. Doubtless the fact that land prices and other capital values were more conservatively estimated in Finney County accounts for the greater number of men in that county who got the family living from the farm, 8% interest on their capital, and more than the current wages.

Indebtedness.

Nothing is more important to a farmer than his indebtedness. Many farmers do not recognize the fact that when they borrow money, they have added to the number of people that the farm must support and that this unseen addition to the family must be fed first. Sometimes indebtedness is evidence of the good business judgment of the operator, while in other cases it may be merely one of his steps toward financial ruin.

For the present study the farms were divided roughly into three groups, (1) those having no mortgage indebtedness: (2) those with small indebtedness, and (3) those with "large" indebtedness. In judging the relative size of the debts those that amounted to $10.00 per acre of owned land or less, were called "small" on the assumption that this represented an amount which approximated a 25% lien on the average real estate values of the region. Any indebtedness of more than this amount was classed as "large".

To give some general idea of the amount of indebtedness, or what might be termed the status of solvency among general farmers of these three counties, the following table is suggestive. (Table 23).

Table 23. Indebtedness

Average Amount of Indebtedness and Changes made during the year, per farm reporting.

Condition of Indebtedness	Sherman County - 49 Farms				Thomas County - 33 Farms				Finney County - 53 Farms			
	No. of farmers	Percent of all	Average amount	Ave per A. owned	No. of farmers	Per cent of all	Average amount	Av. per A. owned	No. of farmers	Per cent of all	Average amount	Av. per A. owned
No debts	16	32.7			9	27.3			15	28.3		
Small debts	20	40.9	$5811	$5.73	10	30.3	$4767	$5.84	22	41.5	$1568	$2.84
Large debts	13	26.4	9279	18.87	14	42.4	14283	20.76	16	30.2	9558	13.34
Number of Debtors who Decreased Debts in 1922 with average decrease per farm and per A. owned.												
Small debts	11	22.4	$ 209	$ .16	3	9.1	$ 40	$ .04	11	20.8	$ 172	$ .33
Large debts	1	2.0	1046	1.63	4	12.1	200	.56	5	9.4	310	.92
Number of Debtors who Increased Debts in 1922 with average increase per farm and per A. owned												
Small debts	5	10.2	$1021	$1.92	1	3.0	$2300	$4.80	3	5.7	$1433	$4.33
Large debts	5	10.2	5400	15.34	1	3.0	200	1.25	4	7.5	171752	7.50(1)

(1) These figures are large because one very large farm took on a very large indebtedness just at the close of 1922 farm year.

Another convenient way of measuring the relative importance of a man's indebtedness as to compare it with his capital. In Sherman County the farmers classed in the small indebtedness group had an average indebtedness amounting to 14.4 per cent of their capital. The average indebtedness of those in the other class was 38.4 per cent of their capital. The corresponding figures for the farmers in Thomas County were 12.9 per cent and 32.5 per cent while for the farmers of Finney County they were 8.6 per cent and 43.6 per cent.

A more detailed analysis of the nature and amount of the indebtedness and the number of farmers having the different kinds are shown in table 24.

Table 24. Number of Farmers having Different Kinds of Indebtedness, With Average Amounts of Such Debts.

Sherman County - 49 Farms

Indebtedness	First mortgage No.	First mortgage Amt.	Second mortgage No.	Second mortgage Amt.	Chattel mortgage No.	Chattel mortgage Amt.	Other debts No.	Other debts Amt.	Borrowing capital No.	Borrowing capital Amt.	Interest paid No.	Interest paid Amt.
None	-	-	-	-	-	-	-	-	3	$ 417	3	$ 14
Small	17	$5401	2	$1837	4	$1010	8	$ 737	7	1543	20	326
Large	13	5779	3	3700	6	3600	5	2140	5	420	12	676

Thomas County - 33 Farms

Indebtedness	First mortgage No.	First mortgage Amt.	Second mortgage No.	Second mortgage Amt.	Chattel mortgage No.	Chattel mortgage Amt.	Other debts No.	Other debts Amt.	Borrowing capital No.	Borrowing capital Amt.	Interest paid No.	Interest paid Amt.
None	-	-	-	-	-	-	-	-	-	-	-	-
Small	8	$4446	-	-	-	-	5	$2300	3	$ 200	10	$251
Large	14	10499	2	$5738	3	$2850	7	3443	9	636	14	800

Finney County - 53 Farms

Indebtedness	First mortgage No.	First mortgage Amt.	Second mortgage No.	Second mortgage Amt.	Chattel mortgage No.	Chattel mortgage Amt.	Other debts No.	Other debts Amt.	Borrowing capital No.	Borrowing capital Amt.	Interest paid No.	Interest paid Amt.
None	-	-	-	-	-	-	-	-	4	$ 281	4	$4.25
Small	17	$1711	-	-	5	$ 654	12	$ 733	10	173	19	121.00
Large	15	6430	2	$1600	12	3117	4	2552	7	1267	13	394.00(1)

(1) Some of the largest debtors paid no interest, for one reason or another.

The analysis of the status of solvency presented in Tables 23 and 24 shows that the farmers visited in these two counties are, as a group not in serious financial straits. Table 22 shows that a number of them lost money in 1922, but their solvency as business men was not seriously threatened. Several received ample returns for their labor and investment, and many made more than enough to live on.

There were some whose credit was nearly exhausted and among them a few who may fail, but by far the greater part of them are financially sound and nearly two-thirds of them are either without debts or are in an easy financial condition.

This does not say that a continuation of the losses sustained in 1922 will not affect them, but such losses are not to be expected on properly-organized farms, for any length of time, and in the main the farms of the region approximate the type best fitted to the region.

Thirty-five of the farmers in the three areas made some reduction of their indebtedness during the year, but the amounts of such decreases were generally small. Practically all of the men had been able to meet their interest payments, very few store accounts were reported, and nearly all had paid their taxes.

That 19 of the total number (or 14 per cent) should have been compelled to increase their indebtedness and some of them rather heavily (Table 23) is about the only indication that more serious conditions might possibly arise in the near future.

NET GAINS OR LOSSES MADE BY FARMERS.

It is difficult to measure the degree of success that farmers achieve in any region. Results obtained from a survey of the last complete year's business tell nothing but the status of the business at the end of that year and whether or not the operator has made a living for his family, wages for himself, and interest on his investment during that year.

In a new country that is occupied by original homesteaders who started with very little extra capital, the mere fact that they have been able to stay and make farms out of "wild" land is generally an indication of a considerable degree of success.

Only about one-third of the farmers interviewed obtained any part of their land as homesteads or relinquishments; the others bought at continually rising prices, as time went on (See Tables 1, 2, 3). The capital thus invested by the later comers was obtained from some other source. Hence the present financial status of these farmers is a measure neither of the long-time producing power of their farms nor of their success as operators.

But if we know what the farmer started with, and what he has now, the difference between these values shows what he has made or lost on the farm during the time he has operated it, provided this farm business neither has been assisted by earnings from other business enterprises nor has furnished money for outside expenditures.

By obtaining from the operator the major items of outside income and expenditure that have affected his farm business, it was possible to apply this correction to the original net worth and in this way to get the total gain or loss on his farm for the period of operation.

However, part of this gain or loss is due to a change in the value of the land, and this is difficult to measure. The value of the land at the end of the last business year (which is the most important item of his present net worth) is an estimate and a difficult one to make, especially when land prices are falling and very few sales are being made. To reduce the effect of this uncertainty to a minimum the apparent increase in value of the land /1 is subtracted from the total gain or loss made by the farm. This result shows what the farm and farmer have produced. Whatever the increment in value of the land may be, it is an additional gain to the owner.

Table 25 shows the average values for each of these quantities for two ten-year periods before 1901 and for each of the four-year periods of settlement since that time.

/1 The buying price of the land is known, but the 1923 value of the same land is only the best estimate the farmer could make. Hence the difference between the two, which would be the increase in value of the land, is to the same degree uncertain as the estimate of the present value of the land.

Table 25. Changes in Net Worth.

By periods showing time of settlement.

Items Average values of	TIME WHEN OPERATORS SETTLED ON THEIR FARMS							
	Before 1891	1891 to 1900	1901 to 1904	1905 to 1908	1909 to 1912	1913 to 1916	1917 to 1920	Since 1920
Sherman County:								
Number of farms in group	10	4	3	4	2	7	14	5
Present net worth (1)	$34,398	$30,548	$57,954	$48,774	$21,734	$28,964	$16,980	$ 17,690
Original net worth (2)	- 522	810	7,290	5,712	3,886	1,261	10,424	10,356
Difference (3)	34,920	29,737	50,664	43,062	17,848	27,703	6,551	7,335
Increase in land values(4)	27,126	20,990	40,997	46,526	16,362	19,019	6,510	-1,219
Diff.minus Land Incr.(5)	7,794	8,747	9,667	-3,464	1,485	8,684	41	8,554
Thomas County:								
Number of farms in group	8	3		5	1	1	13	2
Present net worth (1)	$41,383	$44,172	$ none	$16,555	$97,615	$19,828	$20,432	$24,584
Original net " (2)	- 749	352	"	237	25,730	9,992	10,060	29,012
Difference (3)	42,132	43,820	"	16,318	71,885	9,836	10,372	-4,428
Incr. in land values (4)	33,218	34,660	"	8,074	88,660	12,140	11,196	- 570
Diff.minus land incr.(5)	8,915	9,160	"	8,244	-16,775	-2,304	- 824	-3,858
Finney County:								
Number of farms in group	2	2	6	8	4	16	13	2
Present net worth (1)	$39,082	$40,350	$17,944	$14,580	$21,276	$12,777	$11,585	$ 9,297
Original net " (2)	- 18	2,079	6,445	2,040	7,671	8,635	7,347	8,035
Difference (3)	39,100	38,271	11,499	12,540	13,605	4,142	4,238	1,262
Incr.in land values (4)	33,292	31,061	11,117	7,632	23,732	3,811	2,467	725
Diff.minus land incr.(5)	5,808	7,210	382	4,908	-10,127	332	1,771	537

(1) Average net worth at present time of farmers who settled on the farms, which they operated in 1922, during the period indicated at the top of each column.

(2) Average net worth of these same farmers at the time of settlement "corrected" for outside receipts and expenditures that affect this farm business.

(3) Average difference between these two quantities or average gains or losses made.

(4) Average increase in the value of the land during the period of operation. This is likely to be over estimated.

(5) Average gain or loss minus the increase in land value. Losses are prefixed by minus (-) signs.

The data shown by settlement periods in Table 25 are summarized for the three separate areas on a per farm basis and presented in Table 26 which follows.

Table 26. Changes in Net Worth (1)

Per farm averages for whole period.

Items	Sherman County	Thomas County	Finney County
Present net worth	$28,725	$29,654	$15,885
Original net worth (corrected)	5,247	6,690	6,406
Difference	23,477	22,964	9,479
Increase in land value	18,678	19,857	8,413
Difference minus increase in land value	4,799	3,107	1,066
Average period of operation	15.47	15.36	11.19

From Tables 25 and 26, it appears that there has been a gain to most of the farmers in all of the areas both in land values and in increase in net worth due to their activities, and that the amount of these average gains is to some degree associated with the length of the period of operation.

Since some of the individual farmers lost, others gained enough more than the average to make up for most of these losses. Table 27 shows the number of men who made gains and losses within certain indicated limits. The entries are grouped according to the period in which settlement occurred.

(1) The footnote of preceding table applies to this one.

Table 27. Number of Farmers Making Gains or Losses in Net Worth Since Settling.

(Increase in land value has been deducted.)

Sherman County - 49 Farms

Amount of gain or loss per farm	Time when farms were originally settled: Before 1891	1891 to 1900	1901 to 1904	1905 to 1908	1909 to 1912	1913 to 1916	1917 to 1920	Since 1920
Losses								
More than $4,000				1			4	
$4,000 to $2,001						1		1
$2,000 to 0					1			
Av. amount of loss				$33,755	$1,194	$3,953	$7,235	$2,265
Gains								
$ 0 to $2,000	1		1			2	3	2
$2,001 to $4,000	3	1	1				4	
$4,001 to $6,000		1		1	1		3	1
$6,001 to $8,000	2			1				
Over $8,000	4	2	1	1		4		1
Av. amount of gain	$7,794	$8,747	$9,667	$ 6,633	$4,164	$10,790	$2,952	$11,258

Thomas County - 33 Farms

Losses								
More than $4,000					1		1	1
$4,000 to $2,001						1	1	
$2,000 to 0							2	
Av. amount of loss					$16,775	$ 2,304	$7,162	$ 9,705
Gains								
$ 0 to $2,000	1						6	1
$2,001 to $4,000	1	1		1			1	
$4,001 to $6,000	1			2			2	
$6,001 to $8,000	3	1						
Over $8,000	2	1		2				
Av. amount of gain	$8,915	$9,160		$8,244			$1,992	$ 1,989

Finney County - 53 Farms

Losses								
More than $4,000			1		3	3	1	
$4,000 to $2,001			1					
$2,000 to 0			1		1	3	3	
Av. amount of loss			$3,066		$10,127	$ 4,973	$1,865	
Gains								
$ 0 to $2,000			1	2		2	5	2
$2,001 to $4,000	1	1	1	2		6	1	
$4,001 to $6,000				2		1	1	
$6,001 to $8,000			1				1	
Over $8,000	1	1		2		1	1	
Av. amount of gain	$5,808	$7,201	$3,830	$4,908		$ 3,525	$3,386	$ 537

Table 26 gives a broad generalization of the long-time trend of general or diversified farming in the region. Taken with Table 1 and 2 it shows that , generally speaking, farmers are increasing their holdings and their property values. It tells little of the details of the individual man and gives no information concerning the farmers among those visited who are now losing. Their losses have served only to lower the average gain of all. The fact that most of them have gained is encouraging to all who are in doubts as to the possibility of farming in this region. The number of such doubters has been decreasing for some time past, but two decades ago most men had little faith in the region for crop farming purposes.

Tables 25 and 27 show in more detail the number of farmers who have made gains or losses on the farms which they worked in 1922, during the period they have operated them. These tables are so arranged that they also may be compared with Tables 1 and 2, and thus one may be able to judge what effect the price a man paid for his land may have had upon his success or failure.

But the unit used as a basis of classification has in every case been the farm. Table 4 shows that there is a wide range in the sizes of the farms, hence values based upon the farm as the unit really tell us about the successes or failures of the operators rather than the part the land played in producing such results. An attempt to measure this factor approximately and connect it with the length of the period of operation is presented in Table 28. In preparing this table the individual gains or losses in net worth (minus the increase of land value) were reduced to an acre basis by dividing the operator's gain or loss by the number of acres of land which he owned in 1923, and arranging the resulting figures in their proper places in the table. Since the increase in land value has been omitted from the calculation, the results obtained show the average gains (or losses) made by the operation of an acre of the land during the period of occupancy by different men. It shows about what the land has made for the individual farmer over longer or shorter periods of operation. Since the land in each of these areas is rather uniform and the other physical factors are closely alike, the differences in per acre gains for each period show something of the relative managerial ability of the individual farmers as modified by such factors as magnitude of business, credit facilities, and the like.

Table 28. Gains or Losses in Net Worth per Acre of Owned Land.

Number of men making gain or loss and average amount /1
Changes in land values eliminated.

Sherman County - 49 farms visited.

	Period in which first land was obtained						
	Before 1891	1891 to 1900	1901 to 1904	1905 to 1908	1909 to 1912	1913 to 1916	1917 to 1920	Since 1920
Losses								
Over $20	-	-	-	-	-	-	-	-
$11 - 20	-	-	-	-	-	-	2 - $14	-
$6 - 10	-	-	-	1 - $6	-	1 - $7	1 - $9	-
$5 or less	-	-	-	-	1 - $4	-	1 - $5	1 - $5
Gains								
$5 or less	4 - $3	-	1 - $2	-	-	1 - $2	3 - $2	2 - $1
$6 - 10	1 - $8	2 - $7	2 - $7	-	1 - $7	1 - $8	2 - $8	1 - $7
$11 - 20	3 - $13	1 - $17	-	3 - $17	-	3 - $16	3 - $12	-
$21 - 30	2 - $24	1 - $22	-	-	-	-	1 - $26	-
Over $30	-	-	-	-	-	1 - $40	1 - $35	1 - $49/2
Thomas County - 33 farms visited								
Losses								
Over $20	-	-	-	-	-	-	1 - $22	-
$11 - 20	-	-	-	-	-	-	1 - $13	1 - $15
$6 - 10	-	-	-	-	1 - $7	-	-	-
$5 or less	-	-	-	-	-	1 - $5	2 - $1	-
Gains								
$5 or less	3 - $3	-	-	-	-	-	5 - $2	1 - $3
$6 - 10	2 - $6	1 - $7	-	-	-	-	2 - $6	-
$11 - 20	1 - $19	2 - $12	-	2 - $15	-	-	1 - $11	-
$21 - 30	1 - $24	-	-	2 - $28	-	-	1 - $26	-
Over $30	1 - $34	-	-	1 - $30	-	-	-	-
Finney County - 53 farms visited								
Losses								
Over $20	-	-	-	-	1 - $21	1 - $48	-	-
$11 - 20	-	-	-	-	1 - $16	1 - $17	-	-
$6 - 10	-	-	1 - $9	-	1 - $6	4 - $6	1 - $10	-
$5 or less	-	-	2 - $1	-	1 - $3	-	3 - $3	-
Gains								
$5 or less	1 - $1	1 - $4	1 - $5	-	-	2 - $2	5 - $3	2 - $2
$6 - 10	-	1 - $10	2 - $8	4 - $7	-	5 - $7	1 - $6	-
$11 - 20	1 - $15	-	-	2 - $15	-	2 - $13	2 - $14	-
$21 - 30	-	-	-	2 - $27	-	1 - $23	-	-
Over - $30	-	-	-	-	-	-	1 - $46	-

/1 Nearest whole number of dollars.
/2 A few of the very large gains are due to the fact that the farm was a gift to the operator.

An examination of the positions of the figures in the tables shows conclusively two important facts.

1. Not one of the men interviewed, who got their land in the earlier years of the settlement period, has failed to make gains in net worth (and some of them have made rather large gains) per acre of land owned in 1923. Since none has less land now than that first acquired and most of them have more, these figures show a conservative statement of the gains actually made by the operation of their farms during the period of operation. The very real gain in land value, whatever it may be, must be added to the gains shown in the table.

2. Of those men who bought lands at the gradually rising prices since 1905, three-fourths of them in Sherman County and two-thirds of them in both Thomas and Finney Counties have made gains in net worth without considering the increase in land values. In other words, ordinary crop and stock farming as conducted by these men had a two-to-one chance, or better, of making permanent gains for the operator during the period since 1905.

The fact that this period includes the period of high wheat prices which corresponded with a period of high yields must not be overlooked.

In using Tables 27 and 28 it must be remembered that the effects of changes in land values have been eliminated from the figures given. If a man obtained his land at a low cost and has owned it for several years the very real increase in that land's value, whatever it may be, is an asset to be added to the gains shown in the table. This condition occurs on most of the older farms. The opposite condition occurs on those farms whose land values have declined since they were acquired. Generally speaking, these are the farms bought at relatively high prices during the war-time boom, when wheat prices were high. Such decreases in land values are additional losses to some farmers and reduce the net worth of some who otherwise have made progress in net worth.

When changes in land values, as used in Table 15, are calculated to a per acre basis, as explained for changes in net worth, and these values associated with the corresponding values in Table 28 the following results appear:-

(1) For Sherman County all but two of the men who are shown as having made losses in net worth have those losses changed to gains by increases in their land values. One of the others has his loss much reduced and only one lost both on his land and other property. Among those who show gains in net worth in Table 28 all except two made gains in land value and only one of these has a net loss. It thus appears that only three of the farmers visited in Sherman County actually consider themselves worse off than when they started. These three bought land during the war-time period.

(2) For Thomas County all but two of the men showing losses in net worth in Table 28 have those losses more than counterbalanced by gains in land values and only two of the three reporting decreases in land values show an actual decrease in net worth. All but 5 of the farmers believed their land had increased in value, their estimates ranging from $8 to over $50 per acre.

(3) In the Finney County area 8 of the farmers had actual decreases in net worth after adding in the estimated increases (or deducting decreases) of land value. Six of these were on the loss side already in Table 28 and all but one of them had his losses reduced more or less by the gains in his land values. Two of the men showing small gains in Table 28 had them changed to losses by losses in land value. With one exception, the losses in land value reported (7 in all) are all small, averaging less than $2.50 per acre.

CONCLUSIONS

Following are some suggestions concerning the general or diversified farms of this region, which seem warranted by the study.

(1) Farms are fairly well adjusted as to size, the desirable area for a one-man farm being something like one section of land with a little over half of it in pasture. There is nothing hard and fast about this size, but it is a reasonably safe adjustment under existing conditions of possible production, demand, and prices.

(2) The principal crops are wheat, corn, and hay, the first for a cash crop and the other two for stock feed.

(3) Production of meat animals, cattle and hogs, and production of livestock products, particularly cream and poultry products, are essential enterprises that are reasonably well adapted to the region and to the best farm organization.

(4) The small returns per cow given in Table 11 show plainly where one improvement can and should be made. However, highly specialized dairy breeds of cattle are not to be recommended, since they are not adapted to existing pasture conditions. Dual purpose breeds that are good "rustlers" are indicated.

(5) Farming with tractors as the only or even principal source of power on general farms, like those here discussed, is hardly to be recommended generally for the region. Small tractors, to help carry the peak load of the farm work on large farms, when properly handled, have shown themselves to be desirable in other localities.

(6) The farm year of 1922 was not a very profitable one for most of the farmers. Several lost money by their operations, but most of them made a living and some made wages. Several made wages, 8% on their capital, and the family living from the farm; and a few made still more.

(7) Generally considered, the farming business in the area was solvent. From 27 to 33% of the farms had no mortgage indebtedness. Thirty to 40% more of them had only a small indebtedness. The number having large indebtedness ranged from 26% of all in Sherman County to over 40% in Thomas County, but of these there were only a few that were seriously threatened with financial ruin.

(8) Over five-sixths of the farmers in Sherman County, more than three-fourths of those in Thomas County and about two-thirds of those in the Finney County area have made gains in net worth since settling in this region, without taking into consideration the natural increase in value of their lands. This increase is considerable for those who settled here several years ago when land was cheap. There is no question that some of the men who bought their farms during the war-time boom period paid or agreed to pay too much money for their land.

(9) The percentage of failure is not indicated by this report, because these statements take no account of farmers who for any reason have been forced to leave the region. It was possible to obtain definite information only from those who have succeeded in maintaining a foothold. But the fact that certain individuals have succeeded in getting good returns for their labor and investments even during a poor year shows plainly that farming is assured in this region if the farm be properly organized, capitalized, and managed.