

FARMING OPPORTUNITIES IN WESTERN KANSAS - REVISITED

by

RANEY LEE GILLILAND

B.S., Kansas State University, 1975

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Agricultural Economics


Department of Economics

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1979

Approved by:


Major professor

Spec Coll.
LD
2668
.T4
1979
G54
C.2

ACKNOWLEDGMENTS

The writer would like to thank the members of his Committee, Dr. Frank Orazem, Dr. Milton Manuel, and Dr. David Norman for their help and support in this endeavor. The writer would like to especially thank Dr. Roy Frederick, who took time out of his busy schedule to give advice and guidance.

Most of all, the author would like to thank his parents, Mr. and Mrs. Maurice G. Gilliland of Holton, Kansas. Their support and encouragement made higher education not only a goal, but a reality for him. Their dedication to higher education will always be a source of inspiration for this author.

TABLE OF CONTENTS

| | Page |
|--|------|
| ACKNOWLEDGMENTS | ii |
| LIST OF TABLES | iv |
| Introduction | 1 |
| The Problem. | 4 |
| Procedure | 5 |
| Review of Previous Study | 6 |
| Basic Assumptions | 6 |
| Commercial Farms Acreage | 6 |
| Size of Farms | 7 |
| Multiple Operatorships | 7 |
| Hired Labor | 8 |
| Projections for the Future | 10 |
| Survival Rates | 10 |
| Migration Rates | 10 |
| Projections of Rural Farm Males in the Labor Force | 11 |
| Estimates for the Unborn Population | 11 |
| Irrigation. | 12 |
| Public Policy | 16 |
| Limitations | 23 |
| Summary & Conclusions | 25 |

LIST OF TABLES

| Table | Page |
|---|------|
| 1. STATE MAP OF KANSAS, BY MAJOR AGRICULTURAL AREAS . . . | 28 |
| 2. ACTUAL AND ESTIMATED SIZE OF FARMS, STUDY AREA, 1954-1975 | 29 |
| 3. ACTUAL AND ESTIMATED NUMBER OF COMMERCIAL FARMS, STUDY AREA, 1954-1975 | 30 |
| 4. ACTUAL AND ESTIMATED OPERATORS, STUDY AREA, 1954-1975 | 31 |
| 5. ACTUAL AND ESTIMATED HIRED LABOR, STUDY AREA, 1954-1975 | 32 |
| 6. ACTUAL AND ESTIMATED FARMING OPPORTUNITIES, STUDY AREA, 1954-1975 | 33 |
| 7. AVERAGE SIZE OF FARMS, AREA 10a | 34 |
| 8. AGGREGATE ESTIMATES AND AGGREGATE ACTUAL DECREASES (INCREASES) IN FARMING OPPOR- TUNITIES, WITH CORRESPONDING PERCENTAGES | 35 |
| 9. SURVIVAL RATES FOR RURAL FARM MALES, BY AGE GROUP, STUDY AREA | 36 |
| 10. MIGRATION RATES FOR RURAL FARM MALES, BY AGE GROUP, STUDY AREA, 1960-70 | 37 |
| 11. FARMING OPPORTUNITIES BY AGE GROUP, 1980. | 38 |
| 12. FARMING OPPORTUNITIES BY AGE GROUP, 1990. | 39 |
| 13. FARMING OPPORTUNITIES BY AGE GROUP, 2000. | 40 |
| 14. CROP AND LIVESTOCK LABOR STANDARDS FOR POSSIBLE CHANGES IN A REPRESENTATIVE FARM | 41 |
| 15. GOVERNMENT PAYMENTS TO KANSAS FARMERS AS A PERCENTAGE OF TOTAL CASH RECEIPTS FROM FARMING (INCLUDING GOVERNMENT PAYMENTS) | 42 |

Introduction

Continuous mass movements of our population was one of the early characteristics of the United States. The desire for emigration was enhanced by expanding land territory as exemplified by the Louisiana Purchase and the immigration of over seven million people into the United States between 1820 and 1870.^{1/}

As the government acquired more land for the "public domain," it became the policy of the government to turn as much of this land as possible over to individual citizens. There were several reasons for this policy.

First, the government believed this land could be better secured from hostile forces by the dispersion of individual citizens throughout the territory. This, they believed, would help serve as a buffer to any challenge or claim to the land.

Second, since the government was still young and did not yet have authority to levy taxes, the proceeds from the sale of the "public domain" were a source of revenue. By 1856, twelve per cent of the total government receipts were derived from public land sales.^{2/}

The relative ease of acquisition of farm land and the abundance of other favorable natural resources, such as forests, game, water and minerals, encouraged many persons to establish small farms. However, because of topography and crop specificity the land south of the Ohio River was not conducive to this type of development. Thus, the land in this area was often held in larger

estates. Cash crops such as peanuts, cotton, and tobacco were dominant. Slaves were the primary farm laborers.

As time progressed, these two conflicting ideologies and styles of life began to collide. They were never more in dispute than in the Kansas Territory. After many bloody skirmishes, Kansas emerged as a free state in 1861. However, at the time of the passage of the Homestead Act of 1862, people were preoccupied with the Civil War. So, as Hoover states, "The history of Kansas virtually begins at the close of the war, in the summer of 1865."3/

As Kansas was settled after the Civil War, the prospect of individual ownership of land was attractive. Even though large tracts of land were held by railroads, speculators, and Indians, the land for sale was relatively cheap. The provisions of the Homestead Act, the pre-emption given to Union soldiers, the dispersion of railroad claims, and immigration all attributed to the increasing number of farms in Kansas. In 1874, the prospect of steadily increasing numbers of farms in the western part of the state was enhanced by the introduction of hard winter wheat. This crop was well adapted to production in western Kansas and soon became the economic base of the area. With the coming of the railroads, the means of transporting this crop to market was established. Also, the railroads carried the necessary raw materials to sustain the frontier economy.

Despite all the favorable early prospects, farming opportunities in western Kansas have been declining for many years. The major objective of this study is to project future opportunities for farming in this area of the state. Also, the study will analyze some of the major factors causing changes in farming

opportunities and revisit certain aspects of a similar study completed in 1960.^{4/}

The geographical areas of the study are primarily agricultural in nature, and county groupings were made so as to approximate the homogeneity of farming characteristics in each sub-area. These county groupings were originally compiled by Hodges in 1930.^{5/} Since then western Kansas agriculture has undergone considerable change, particularly since the middle 1950's. Because of the advancement of technology, the development of irrigation, economies of scales, and diversification of operations, the uniqueness or homogeneity of sub-areas is no longer as applicable. Thus, this study will consider all the counties simultaneously and as one group.

The Problem

This study deals with farming opportunities for rural farm males from a 29 county area in western Kansas. The hypothesis of the study is that the reduction in the number of rural farm males of all ages is brought about, primarily, by the reduction in farming opportunities.

A corollary objective of this study is to evaluate procedures and estimates used in projecting farming opportunities for years 1950-1975 by Orazem, Hajda, and Bell employing 1950 data and covering the same area.^{6/} The original study area included twenty-nine western Kansas counties, which were grouped into four sub-areas. These areas, 10a, 10b, 11, and 12 are shown in Table 1.

During the last two decades, there have been profound changes in farming technology, as well as the mix of farm crops and livestock produced in the area. These changes in crops produced can be attributed almost solely to the development of irrigation. Irrigation has provided alternatives and has given the area an impetus for producing crops not usually suitable in semi-arid regions. In 1976 nearly 2.4 million acres were under irrigation in the study area, compared to 125,775 in 1950. The 1976 irrigated acreage in the study area was 81% of the total irrigated acreage in the state of Kansas. Examination of irrigation and other accompanying factors, and their impact on farming opportunities will be included in this study.

Procedure

Procedures used in this study are similar to those used by Orazem, Hajda, and Bell.^{7/} This study projected farming opportunities by assuming farming opportunities could be calculated by the addition of hired labor and the product of the number of farms and the number of operators per farm. The number of farms was determined by the division of the number of commercial farm acres in the area by the average size of farms.

Some factors, relevant to this study, such as land area in acres, average size of farm, number of farms, and number of operators, were obtained directly from secondary sources, largely from the U. S. Agricultural Census. Other data such as survival and migration rates, pertaining to the area under study were estimated using procedures explained later.

Data were used to make an ex post analysis of the earlier study's projection of the area's farming opportunities.

The analysis of past trends is the base on which future farming opportunities are studied. Projections for the years 1980, 1990, and 2000 are included in this study.

Included in the analysis of farming opportunities are two factors which are likely to be essential to farming opportunities. These factors are the impact of 1) irrigation and 2) government programs on opportunities. Other factors such as technology in equipment, seed varieties, livestock production, and availability of credit are known to be important determinants, but their relative importance is likely to be overshadowed by irrigation trends and changes in federal government programs.

Review of Previous Study

Basic Assumptions. The original study projected the supply of farming opportunities considering four alternative situations: 1) An increase in the average size of farms at the 1950-1954 rate with a multiple operatorship ratio of 1.3. 2) An increase in the average size of farms at the 1950-1954 rate with a multiple operatorship rate of 1.5 men per farm. 3) No increase in the size of farm with a multiple operatorship ratio of 1.3 men per farm. 4) An increase in the average size of farm at double the 1950-1954 rate with a multiple operatorship of 1.3 operators per farm. In totalling farming opportunities, an increase in the average size of farms decreases the opportunities, since one person then manages a larger number of acres. But as the ratio of multiple operatorships increases, so does the number of farming opportunities. In retrospect, projections from the fourth alternative, most closely represented the actual trend in terms of the size, number of commercial farms, farm operators, hired labor, and therefore the total number of farming opportunities. (See Tables 2, 3, 4, 5, and 6.)

Commercial Farms Acreage. One of the factors which determines farming opportunities is the number of acres in commercial farms. This acreage was assumed to remain constant throughout the period of the original study because of the relatively small growth of the non-agricultural sector and little or no metropolitan development within the areas. In actuality, commercial farm acreages increased slightly from 14,628,333 acres to 15,366,738 acres during the twenty-five year period, an increase of five percent. This increase was due

largely to the re-classification of commercial farms and the acquisition of non-commercial farms and acreages by commercial ones.

Size of Farms. In regard to the changing size of farms, the original study treated the four sub-areas separately, and as previously indicated, three projected farm size rates were used. In the first case, the average farm size in 1950 was held constant throughout the study period. In the other cases, the rates used were an increase in the average farm size at the 1950-1954 rate and double the 1950-1954 rate, respectively. Increases in the average size of farms were estimated as shown in Table 7 for sub-area 10a. These estimates corresponded closely to the actual increase in the average size of farm. However, a decrease in the average size of farms occurred in the 1969 to the 1974 period. (See Table 2.)

This reversal of the long-running trend of increasing farm size may have been caused by a variety of factors. One of the factors may have been increased numbers of young men returning to farm or possible dissolution of multiple operatorships. Favorable weather conditions, which resulted in excellent crops, coupled with good prices brought increases in farm incomes during this period. Increased incomes made it possible for young men to farm on their own and for multiple operatorships to begin operating separately. The rapid development of irrigation in the area has brought about a more intensive agriculture than once existed in the area, and may have reduced the need or feasibility of operating larger acreages. As would be expected, as farm size decreased, the number of farms increased. (See Tables 2 and 3.)

Multiple Operatorships. Because of multiple operatorships, western Kansas

farms have an average of more than one operator. In many instances there is a father-son operation, partnership, or other combination resulting in more than one person being directly involved in the operation of a farm. The original study used 1.3 or 1.5 operators per farm in its major assumptions regarding farming opportunities. Kansas Farm Management Association farms in that area, however, show only an average of 1.1 operators per farm in 1970 and 1976.^{8/} While the original study may have closely approximated the man-size farms for the 1950's and 1960's, the ratio of man-operators per farm in the area has in recent years declined. One of the possible factors affecting the change is operators per farm may be the availability of hired farm labor.

Hired Labor. The original study assumed a continuous decline in the numbers of hired men. It assumed that the number of hired men will decline by estimating the total number of hired men to be 83% of the previous year's total. In retrospect, the numbers of hired laborers have had no specific trend and vary greatly from one year to the next. (See Table 5.) If there is a trend in the area's hired labor, it is increasing rather than decreasing.

For example, hired labor in 1974 provided 28% of the total actual farming opportunities, as compared to 20 percent in 1969. The advance of irrigation, and with it, specialty crops, may enhance the need for a significant increase in hired labor. As hired labor numbers have increased, man-operators per farm have decreased.

The model, in general, over-estimated the decline in farming opportunities, primarily because of its inaccuracies in projecting the numbers of hired

labor.^{9/} In reality, the area's total farming opportunities declined from 17,519 in 1954 to 15,059 in 1969, but then increased to 17,304 in 1974. This compares to an estimate of 20,299 in 1955, then declining continuously to 14,157 in 1975. (See Table 6.) The five year incremental decreases (increases) in farming opportunities for both the estimated and actual are reported in Table 8.

Projections for the Future

Projections for the future rural farm male population within the study area depend upon several assumptions regarding survival and migration rates. Rates were determined for the 1960-70 period, and then projected into the future. However, for the projection periods migration rates were also halved in order to reflect demand for farming opportunities and economic consequences which might allow more males to enter farming.

Survival Rates. Survival rates were assumed to be the same as those for white males in Kansas. These rates were calculated for both the 1959-61 and 1969-71 periods.^{10/} As an example of this calculation, the sum of those estimated to survive in the 10-15 age group was divided by the sum of those estimated to survive in the 0-5 age group. This gave a ten year survival rate for the 0-4 age group. The rates for the 1959-61 and the 1969-71 periods were so nearly the same that the 1959-61 survival rates were used throughout the projections of this study. Survival rates can be seen in Table 9, Column 3.

After 1959-61 survival rates were calculated, the number of rural farm males surviving in 1970 could be estimated by multiplying the survival rate times the 1960 rural farm male population.^{11/} (See Table 9, Column 4.)

Migration Rates. Migration rates were estimated by subtracting the 1970 population of males in each category from the estimated to be surviving in 1970. (See Table 10, Columns 2 and 3.) The difference was assumed to be due to migration. (See Table 10, Column 4.) Rates were then calculated by dividing the difference of the 1970 estimation and the actual 1970 population by the 1970 estimation. Thus,

arriving at migration rates for age groups. (See Table 10, Column 5.)

Projections of Rural Farm Males in the Labor Force. Survival rates and the migration rates for 1960-70 were used to project the future number of rural farm males between 20 and 64, which were to represent the full-time opportunities to farm in western Kansas. At the same time, migration rates were halved in order to represent possible demand for farming opportunities or economic conditions which could allow more farming opportunities in western Kansas. Projections were made for 1980, 1990, and 2000.

The 1980 projections were determined by multiplying the 1970 population times the corresponding survival rates.^{12/} This product was then added to the product of the migration rate and the 1970 population. This addition was then subtracted from the 1970 population, thus leaving an estimate of the living and residing males in 1980. (See Table 11, Column 2.)

The second projection for 1980 represents static survival rates, but migration rates one-half of those used for each age group of the previous projection. The results of these calculations are shown in Table 11, Column 3.

Projections for 1990 and 2000 were calculated in the same manner and are shown in Tables 12 and 13. Totals indicated represent only those from age 20 through 64. For the year 2000, however, it was necessary to estimate the number of births in the 1970-75 and 1975-80 periods since the males born in these periods will reach the age of 20 before the year 2000.

Estimates for the Unborn Population. Births in the 1970-75 period were estimated by multiplying the 1970 rural farm population times birth rates per thousand

for the area.^{13/} This estimate is shown in the -5 to -1 age group in Table 10, Column 3.

The 1975-80 births were estimated by first averaging the death and birth rates for the study area.^{14/} An estimated 1975 population was established from the addition of five years of births and the subtraction of five years of deaths to the 1970 population. Multiplying the 1975 estimated population times the average birth rate for the area resulted in an estimate of 1,465 for the -10 to -6 age group. (See Table 10, Column 3.) The -5 to -1 and -10 to -6 age groups were assumed to survive and migrate at the same rate as the 0-4 age group until appropriate rates could be used.

Using 1960-70 trends there will be 6,502 rural farm males in the work force in 1980, 4,552 in 1990 and 3,217 in 2000. Projections for rural farm males in the work force at half the 1960-70 migration rate are 8,630 for the year 1980, 5,855 for the year 1990, and 4,215 for the year 2000. Important to note is the average size of farms in the area if these projections accurately represent future trends. By the year 2000 farms will, according to these projections, average approximately 3,500 acres per man in one case and 4,500 in the other. This compares to the current average size farm of 1,485 acres.

Irrigation. Because of the use of irrigation, western Kansas farmers have changed from a predominately wheat economy to wheat, corn, and other irrigated crops. However, underground water in western Kansas is being utilized faster than it is being replenished at the present time.

The development of irrigation in the twenty-nine county study area has

taken place essentially in the past twenty-five years. Because of the 2.3 million acres now under irrigation, dependence on annual rainfall has been reduced. Western Kansas now has the top eight corn producing counties in the state with a combined production in 1976 of over seventy-three million bushels with a farm value of approximately 167 million dollars.^{15/} In the twenty-nine county area, there were 76,191 acres of corn in 1950, compared to 896,965 in 1974.^{16/} In short, corn has become, because of irrigation development, a dominant crop, where previously, it was unfeasible.

The availability of water from irrigation has led to a more diverse agriculture in western Kansas. Land previously devoted to summer fallow, wheat and sorghum is now used in corn production. Because of irrigation more land is now in continuous production. Thus, as long as irrigation is available, relatively fewer acres are needed to sustain a farming operation and use of irrigation water can maintain more opportunities for farming.

In some areas of western Kansas underground water is no longer available. This land has reverted to dryland farming. Many of the wells on the periphery of the Ogallala Formation can no longer produce enough water to irrigate on a substantial basis. The better areas for irrigation are where the saturated thickness of the formation is greatest. Since 1940, the maximum decline in the water table in the Southwest Kansas District has been 134 feet.^{17/} However, southwest Kansas also has some areas where the saturated thickness is 400-700 feet. In areas such as these, a 20 feet decline is not nearly as critical as it is in an area of 100 feet of saturated thickness.

As water levels decline, and more farmers are forced to revert to dryland practices, more land will be needed by individual farmers in order to sustain the same amount of income. Also the opportunity to raise crops that depend upon irrigation will no longer be present. As more land is needed to sustain an operator, other operators will eventually be forced to seek other employment. Thus, there will be fewer opportunities for farming in western Kansas.

A study done by Buller, Langemeier, and Kasper in 1975 may be used to provide some clues about what could be expected by the loss of irrigation.^{18/} The representative farm, besides containing cropland, also consisted of a beef cow herd and a cattle feeding operation. This representative farm is assumed to be on the periphery and sometime in the near future will revert to complete dryland farming.

It is assumed the operator still has 250 hours of his own labor available per month when the irrigation water ceases. The need for full-time hired labor could be removed. Elimination of the hired labor decreases the full-time opportunities on this farm by 50%.

Other effects of the loss of irrigation include probably elimination or at least curtailment of the cattle feeding operation because the operator would no longer be able to raise corn to feed his cattle. Having lost his irrigation, the operator would most likely raise more wheat and sorghum. Possible changes in the representative farm with no irrigation might be as follows: 1000 acres of wheat, 155 acres of grain sorghum, 40 acres of alfalfa, 30 acres of other hay, and 650 acres of summer fallow. This compares to 143 acres of irrigated wheat,

317 acres of irrigated corn, 82 acres of irrigated sorghum, 21 acres of irrigated sorghum silage, 23 acres of irrigated alfalfa, and 8 acres of irrigated hay. Before the loss of irrigation there was also 704 acres of dryland wheat, 59 acres of dryland sorghum, 8 acres of dryland alfalfa, 24 acres of dryland hay, and 586 acres of summer fallow.

As can be seen, the range of possible crops narrows dramatically without available irrigation. Also, with no irrigation, there now is the need to allow for more summer fallow acreage. All hay, sorghum, and wheat, having converted to dryland practices, would result in lower and more erratic average yearly yields. In addition, the possibility of specialty crops, such as sugar beets, would not be feasible.

A month to month estimation of required hours, using the new crop-labor and livestock-labor standards from Buller, Langemeier, and Kasper is shown in Table 14. As before, hay was handled by custom operators. Time required for the cow operation remained the same. More available time comes from the elimination of the feeding operation. However, if the operator was willing and able to reduce his feeding operation to approximately 55 head from the current number of 199 head, he would have time to feed them during the months of November through March even without full-time hired labor. In this case it would be necessary to use part-time labor during the critical months of November and March.

Under the above conditions, with the operator as the only available labor on the farm, there were two months in which the available hours were not sufficient to perform the needed farming operations. These months were June and

August. In June, the time of harvest, there were 969.5 deficit hours. This shortage could be overcome by custom harvesting. In August there was about a 170.0 hour deficit. However, in this representative farm since there are 570 part-time labor hours available, these would be sufficient to work crop ground in August and help feed cattle in other critical months, November and March.^{19/}

The repercussions of reverting to dryland farming would be widespread. Not only would income be reduced, but the elimination of a farming opportunity would occur in the form of the full-time hired laborer. Secondly, crop diversification, as protection against the adversities of the marketplace, would no longer be as available. Concurrently, premium profits for speciality crops would likely not exist. The operator would be forced into a position of higher risk and uncertainty due to insect or disease damage or drought susceptibility. The operator's land, if he were the owner, would be less valuable, and thus his borrowing capacity for needed operating capital would be diminished. Also, if the lack of irrigation water were widespread, there would be increased competition between operators to buy or lease more land in order to maintain the income of the operators and their families. The operators who have acquired adequate wealth will have a better chance to acquire this land, and the competition between them may in the short run sustain the prices of farmland. Other operators simply would not have the resources necessary to compete. Eventual elimination of some less viable farms would likely result.

Public Policy. Farming opportunities are determined by many factors. One of the important factors has been the impact of public policy. In some cases,

legislation passed many years ago, is still vitally important. Distribution of newly acquired land among people was the most important early decision, since it allowed the majority of the population to derive an "adequate" income or make a living from the land, which essentially determines farming opportunities.

As technological changes were occurring, and factories and plants began to emerge, excess labor from rural areas was enticed or drawn to urban areas. Further, Congressional action such as the Morrill Act, the Hatch Act, and the Smith-Lever Act, encouraged technological and educational training of farm youth. This, too, increased farm productivity and reduced farming opportunities for those marginally employed in agriculture. However, as history has shown, the migration from rural to urban areas has not been swift enough to allow farm incomes to keep pace with urban incomes. Among other reasons, inherent ties to the land, lack of education or skill, and higher than average birth rates among rural people helped this disparity to develop.

By the 1930's, much of the agricultural sector was plagued not only by the Depression, but also by drought in the Plains states. Therefore, Congress took action to help alleviate low farm incomes. "The Agricultural Adjustment Act was approved on May 12, 1933. Its goal of restoring farm purchasing power of agricultural commodities or the fair exchange value of a commodity based upon price relative to the pre-war 1910-14 level was to be accomplished in a number of ways. These included the authorization (1) to secure voluntary agreements with producers and use of direct payments for participation in acreage control programs; (2) to regulate marketing through voluntary agreements with

processors, associations of producers, and other handlers of agricultural commodities of products; (3) to license processors, associations of producers, and others handling agricultural commodities to eliminate unfair practices or charges; (4) to determine the necessity for and the rate of processing taxes; and (5) to use the proceeds of taxes and appropriate funds for the cost of adjustment operations, for the expansion of markets, and for the removal of agricultural surpluses."^{20/} However, these attempts to stabilize the agricultural sector of the economy by supplementing incomes and reducing acreages of specified crops did little to change the disparity between the changes in the farm and those in non-farming sectors. In 1936 the Supreme Court declared the production controls of the act unconstitutional. "Large crops of wheat and cattle in 1937, accentuating the twin problems of surplus and low prices, led to the passage of the Agricultural Adjustment Act of 1938, the first legislation that made price support mandatory for certain commodities (corn, cotton, and wheat)."^{21/}

By the 1940's migration from the farm was continuing as it had in years previously. Yet, because of the threat of war, price supports were increased to spur even more production. "Section 8(a) of the Stabilization Act of 1942 directed Commodity Credit Corporation to make loans to cooperators at 90 percent of parity upon any crop of cotton, corn, wheat, rice . . ."^{22/} Price supports were maintained throughout World War II and the Korean conflict.

With the end of the Korean conflict, incessant problems of crop surpluses and low prices reappeared. This occurred even after "approximately 9,375,000 persons (had) transferred from farms between 1940 and 1950."^{23/} The 1920-50

average rate of migration per decade was 21 percent of the farm population, but this had not been sufficient to help correct the problems of low prices and surpluses.

In an effort to help alleviate rising surpluses, the U.S. Congress passed the U.S. Agriculture Trade Development and Assistance Act of 1954. Commonly known as P. L. 480, this act allowed concessionary sales of grain to foreign countries. A vast amount of grain has been shipped under P. L. 480 auspices, permitting a reduction in surpluses.

Since 1954 farmers have operated under government programs which attempt to alleviate excess production, provide price supports, and provide loans and disaster payments to participating producers. These programs have pumped billions of dollars into the farm economy. In fact, the yearly national average from 1966 to 1969 was \$3.4 billion.^{24/} Yet, this apparently did little to curb the movement of people from rural to urban areas.

Even though government payments to the farmers of the counties under study received \$52,713,000 and \$2,202,000 in census years 1969 and 1974, respectively, there is little indication that this will halt long-term farm migration. Government payments to Kansas farmers as a percentage of the total cash receipts from farming are shown in Table 15. As seen from Table 15, as much as 14.6% of total cash receipts in Kansas were derived from government payments in 1965. "Although government price programs have been instrumental in increasing the incomes of farm families this is not sufficient evidence to conclude they impeded migration. Furthermore, even though price supports have been instrumental in

increasing farm income it is not unlikely that the return for labor in agriculture has been increased to the same extent."^{25/} In fact, "perhaps the most striking result from the simulation analysis (of simulated effects of alternative agriculture policies) is that government policies which increase farm prices and incomes do not 'hold' labor in farming but rather encourage the substitution of highly productive capital outputs for labor in agriculture."^{26/}

It would be incorrect, however, to assume a reduction in federal farm payments results in increasing farming opportunities. The early 1970's seem to be exemplary of this. Federal farm payments decreased approximately 90% from the 1969 to the 1974 census periods, and at the same time farm incomes rose substantially.

Increased foreign demand for crops produced in the area and abundant harvests were largely responsible for this increase in income during that period. Notable, however, is the fact that farming opportunities did increase in the western Kansas study area from 1969 to 1974. (See Table 6.) It is unlikely this trend will continue to be reflected in the 1979 census, since dwindling foreign demand for farm products and record surpluses have plagued most farm operations since 1975. Although these determinants mentioned seem to be more responsible, it is noteworthy that Ray and Heady conclude in their study that: "Not unexpectedly, farm prices and incomes decline substantially in the absence of government farm programs."^{27/}

Some farmers believe the federal government should take action to raise supports for agricultural commodities. They cite the disparity between farm and

non-farm income to support their beliefs. If farm legislation and farm policy can affect farm incomes as farmers believe and as the Ray and Heady study concludes, then it is logical that farming opportunities will be affected. But, as Hathaway states, "We are confronted with a group (farmers) who seem to place the highest value on individual freedom and yet periodically vote into effect controls that put rather stringent restrictions upon their freedom to the amount of a crop they may plant or sell."^{28/}

Unfortunately this contradictory approach is not limited to farmers as a group. Instead, the confusion often continues to be reflected in the political pressure farmers still hold in farm organizations and political parties. As a result, traditional ties to political parties and farm organizations, farmers' influence upon government policy has been erratic and at times ineffective. Instead of clear, concise propositions for government officials, farmers are perceived as lobbying for and supporting alternative approaches to increase farm incomes. This tends to confuse Congressmen and Senators from urban districts, whose support is needed for passage. These Representatives, are for the most part, unaware of the conflicting factors which exist in the farming community, and thus confusion of appropriate action for a small percentage of the population only adds difficulty in developing a farm program.

Because farmers and farm groups are unable to present uniform and united lobbying efforts, agricultural legislation usually is tied to some issue which attracts the votes of urban Congressmen. As a result, huge fiscal expenditures are tied to farm legislation. Recently, huge drains on the Federal Treasury

have been targets for cutbacks. The expenditures made to alleviate farm income problems are among those targeted for cutback, since it is politically feasible to do without rural-farm votes during election. Compromise with special interest groups helps sustain agricultural legislation, especially in times of general economic depression.

The result, even in favorable economic times, has been the migration of farm youth to the urban sector. The economic attraction and "bright lights" will be sacrificed by few in order to farm. It seems farming opportunities will continue to decline. (See Tables 11, 12, and 13.)

However, some attempts have been made by state and federal governments to modernize rural communities, making them attractive to businesses and factories. Government projects in rural areas, which employ semi-skilled or unskilled labor, provide off-farm income to those who need it. Government loans to small communities used to develop modern water and sewage facilities promote business investment. Small towns are often attractive to business if they are strategically located and can provide the necessary services for the day to day operation of the business. Such businesses could provide off-farm income to sustain farming opportunities. In a study conducted at Kansas State University, it was found that it could be "assumed that more than 58% of all Kansas farms received nonfarm income in 1974 for an average greater than \$4,430."^{29/} The average nonfarm income for Farm Management Associations 3 and 5 in western Kansas was \$4350 per farm.^{30/} An increase of nonfarm income over time has been shown for the study area. As off-farm income opportunities in rural areas increase, more farming opportunities may be sustained.

Limitations

As it is true with any study, this one too is not without its limitations. Only the future will reveal whether the projections and choice of major factors made in this study accurately reflect changes that will occur in the future.

The assumption that birth rates of rural-farm females in western Kansas is the same as that for all females in the twenty-nine county area is one limitation. However, the lack of other more precise data necessitated its use. Nor were precise data available for survival rates and migration rates. Survival rates for white males in Kansas were used in place of survival rates for rural-farm males and migration rates for Kansans by counties were used to replace those for rural-farm males. These rates were also assumed to remain constant throughout the projection period.

Social and economic events may also change birth and migration rates in the years to come. Modern science and programs to provide better health care to western Kansas may cause survival rates to increase. The quantitative measure of any changes and the predictability of these events cannot be determined presently. Therefore, static rates were assumed.

The original study assumed 1.3 and 1.5 operators per farm for its estimation. But current Farm Management Association farms in this area average only 1.1 operators per farm.

Another limitation in this study deals with the use of ages 20 and 65 for beginning farming and retiring from farming, respectively. Even though these are used as averages, there are no precise data giving ages at which farming

begins and terminates.

The constant availability of irrigation water and the consistency of an appropriate agricultural policy are also assumptions made in this study. Although the former is much more predictable than the latter, drastic changes in these variables would have immeasurable impact upon farming opportunities, thus limiting the accuracy of the projections in the study.

Another limitation is the inability to predict future increases in off-farm or non-farm employment opportunities and incomes. Increases may help sustain some farming opportunities which otherwise might not exist.

Many variables may affect farming opportunities. Accounting for each is not possible. Recognizing trends and major factors helped to provide a basis for the projections made in this study. Also, for consistency and comparability, the conceptual format made in the original study was followed. Lack of specific data and limitations of assessment may result in significant error. However, recognition of this study as providing probable trends in opportunities to farm in western Kansas may compensate for any deviation.

The projection of two possible rural farm male populations, as a result of using two different migration rates, indicate the difficulty of estimating the population in the future. The demand for these opportunities and physical limitations for larger farms in the future needed to be reflected.

Summary & Conclusions

Throughout most of this study there has been much discussion of farming opportunities. It may well be that fewer farming opportunities would help to stabilize incomes and bring about more efficiency and productivity per farm. The realization of this has been demonstrated by the continuous out-migration from the study area. It must be stated that the personal regret in leaving farm life has occurred in the past and surely will continue to a degree in the future.

It is clear from the projections made in this study that out-migration will likely continue. The topography and type of farming suited to western Kansas is too adaptable to large acreages and fewer opportunities.

As demonstrated in the projection section, there is little sign of significant change in out-migration patterns. However, rates of change may vary with economic conditions and the demand for farming opportunities. Critical to the future evaluation of this study will be the current definition of a rural-farm resident. If increased business and industry activity continue to expand in western Kansas, many will return to small acreages near these institutions. If these people are included in the rural-farm population definition, this will distort the number of current opportunities. This discrepancy is currently prevalent in eastern Kansas. Certainly, it will never be as severe in western Kansas, but could be significant enough to distort computations. The projections for future farming opportunities were made in order to establish the trend most likely to take place. Projections of this sort are important in that they give policy planners and political leaders an idea of what types of changes are likely to occur. Their

use may make it easier for Kansans to adapt to imminent changes.

Despite the changes that took place during the original study, the projections made in that study were exceedingly accurate. The projection of the number of hired labor, which is extremely difficult to predict, was the basic cause of distortion. Most likely, the changes irrigation brought about were the cause for increased and erratic hired numbers.

As indicated in this study, the future of irrigation in western Kansas will play a tremendous role in determining farming opportunities. Currently, irrigation provides diversity, smaller acreages, and added incomes to the area. The absence or decline in its use will lead to smaller farm incomes, less diversification, and fewer farming opportunities. The conservation and wise use of this resource is essential to farmers in western Kansas and to the economy of the state as a whole. Regulation of this resource may become mandatory, if voluntary control is not established.

Just as in irrigation, government action on other fronts may be needed in the future, as it has in the past and present. Government intervention seems to be unwanted by almost everyone, yet at times it has been the only recourse. If technology and productivity continue as in the past, it is unlikely that government will allow agriculture to function on its own. Even if there are no changes, today's degree of involvement almost warrants mandatory involvement in the future. Therefore, it is unlikely agriculture will operate on its own, and thus must be able to adapt to continuing changes in government policy.

The changes in the western Kansas study area are intertwined. The

development of irrigation led to many of the businesses and factories which not only support the area, but provide off-farm income. At the same time, irrigation led to diversification of crops. This has not only led to increased farm incomes, but also to the establishment of feedlots and packing plants. These help to promote full-time jobs for farm youth and to provide additional income. Government programs which gave support to farmers, also have provided loans to cities to construct needed power, water, and sewage plants. The linkages between government programs, irrigation, technology, and managerial abilities, provide a delicate economic balance. The tilt of this balance determines farming opportunities in western Kansas.

TABLE 2
 ACTUAL AND ESTIMATED SIZE OF FARMS,
 STUDY AREA, 1954-1975

| ACTUAL | | ESTIMATES ^{a/} | |
|--------------------|----------------------------|-------------------------|----------------------------|
| Year ^{b/} | Size of Farm ^{c/} | Year ^{b/} | Size of Farm ^{c/} |
| 1954 | 1054 | 1955 | 1058 |
| 1959 | 1236 | 1960 | 1158 |
| 1964 | 1353 | 1965 | 1258 |
| 1969 | 1332 | 1970 | 1358 |
| 1974 | 1294 | 1975 | 1458 |

^{a/} Estimates from Bell.

^{b/} Years do not perfectly correspond because of adoption of different census years.

^{c/} Average acres per farm.

TABLE 3
 ACTUAL AND ESTIMATED NUMBER OF COMMERCIAL
 FARMS, STUDY AREA, 1954-1975

| ACTUAL | | ESTIMATED ^{a/} | |
|--------------------|---|-------------------------|---|
| Year ^{b/} | Number of Com- mercial Farms ^{c/} | Year ^{b/} | Number of Com- mercial Farms ^{c/} |
| 1954 | 13,813 | 1955 | 13,826 |
| 1959 | 11,835 | 1960 | 12,632 |
| 1964 | 10,812 | 1965 | 11,623 |
| 1969 | 10,982 | 1970 | 10,772 |
| 1974 | 11,305 | 1975 | 10,033 |

^{a/} Estimates from Bell.

^{b/} Years do not perfectly correspond because of adoption of different census years.

^{c/} Derived from the division of total commercial farm acreage by the average size of farms.

TABLE 4
 ACTUAL AND ESTIMATED OPERATORS,
 STUDY AREA, 1954-1975

| ACTUAL ^{a/} | | ESTIMATES ^{a/} | |
|----------------------|--|-------------------------|--|
| Year ^{b/} | Total Number of Operators ^{c/} | Year ^{b/} | Total Number of Operators ^{d/} |
| 1954 | 15,194 | 1955 | 17,974 |
| 1959 | 13,019 | 1960 | 16,422 |
| 1964 | 11,893 | 1965 | 15,116 |
| 1969 | 12,080 | 1970 | 14,004 |
| 1974 | 12,436 | 1975 | 13,043 |

^{a/} Estimates from Bell.

^{b/} Years do not perfectly correspond because of adoption of different census years.

^{c/} Derived from the use of 1.1 operators per commercial farm.

^{d/} Bell used 1.3 operators per farm for these estimates.

TABLE 5
 ACTUAL AND ESTIMATED HIRED LABOR,
 STUDY AREA, 1954-1975

| ACTUAL | | ESTIMATES ^{a/} | |
|--------------------|--------------------------------------|-------------------------|--------------------------------------|
| Year ^{b/} | Hired Labor Numbers ^{c/} | Year ^{b/} | Hired Labor Numbers ^{d/} |
| 1954 | 2325 | 1955 | 2325 |
| 1959 | 1988 | 1960 | 1934 |
| 1964 | 4114 | 1965 | 1609 |
| 1969 | 2979 | 1970 | 1339 |
| 1974 | 4868 | 1975 | 1114 |

^{a/} Estimates from Bell.

^{b/} Years do not perfectly correspond because of adoption of different census years.

^{c/} Hired labor figures for the area from the Census of Agriculture, 1950-74.

^{d/} Hired labor estimates from Bell.

TABLE 6

ACTUAL AND ESTIMATED FARMING OPPORTUNITIES,
STUDY AREA, 1954-1975

| ACTUAL | | ESTIMATES ^{a/} | |
|--------------------|--|-------------------------|--|
| Year ^{b/} | Total Opportunities for Farming ^{c/} | Year ^{b/} | Total Opportuni- ties for Farming ^{d/} |
| 1954 | 17,519 | 1955 | 20,229 |
| 1959 | 15,007 | 1960 | 18,356 |
| 1964 | 16,007 | 1965 | 16,725 |
| 1969 | 15,059 | 1970 | 15,343 |
| 1974 | 17,304 | 1975 | 14,157 |

^{a/} Estimates from Bell.

^{b/} Years do not perfectly correspond because of adoption of different census years.

^{c/} These are the addition of actual hired labor and operators for census years.

^{d/} These are the addition of estimated hired labor and operators for projection year at the 1960 study.

TABLE 7
 AVERAGE SIZE OF FARMS, AREA 10a

| | 1950 Ave. | 1950-54 Ave. Inc. | Double |
|------|-----------|-------------------|--------|
| 1950 | 888 | 888 | 888 |
| 1955 | 888 | 928 | 968 |
| 1960 | 888 | 968 | 1048 |
| 1965 | 888 | 1008 | 1128 |
| 1970 | 888 | 1048 | 1208 |
| 1975 | 888 | 1088 | 1288 |

| <u>County</u> | <u>1969</u> |
|---------------|-------------|
| Finney | 1455 |
| Gove | 1246 |
| Hodgeman | 1079 |
| Lane | 1353 |
| Ness | 1032 |
| Trego | <u>957</u> |
| | 7122 |
| Ave. 1969 = | 1187 |

TABLE 8

AGGREGATE ESTIMATES AND AGGREGATE ACTUAL DECREASES (INCREASES) IN FARMING OPPORTUNITIES, WITH CORRESPONDING PERCENTAGES

| Years | Est. Decreases in Opportunities | Percent- age | Years | Actual Decreases (Increases in Opportunities) | Percent- age |
|---------|------------------------------------|-----------------|---------|---|-----------------|
| 1950-55 | 2,354 | 10.4 | 1950-54 | 1,239 | 6.6 |
| 1955-60 | 1,943 | 9.6 | 1955-59 | 2,512 | 14.3 |
| 1960-65 | 1,631 | 8.9 | 1960-64 | -1,000 | -6.7 |
| 1965-70 | 1,382 | 8.3 | 1965-69 | 948 | 5.9 |
| 1970-75 | 1,186 | 7.7 | 1970-75 | -2,245 | -14.9 |

TABLE 9
 SURVIVAL RATES FOR RURAL FARM MALES,
 BY AGE GROUP, STUDY AREA

| (1) Age Group | (2) 1960 Population of Rural Farm Males | (3) Survival Rate 1959-61 | (4) Estimated Sur- viving in 1970 |
|------------------|---|---------------------------------|---|
| 70 - 74 | | | |
| 65 - 69 | | | |
| 60 - 64 | 829 | | 1273 |
| 55 - 59 | 1243 | | 1445 |
| 50 - 54 | 1478 | .861 | 1422 |
| 45 - 49 | 1593 | .907 | 1426 |
| 40 - 44 | 1509 | .942 | 1389 |
| 35 - 39 | 1477 | .965 | 1127 |
| 30 - 34 | 1421 | .977 | 920 |
| 25 - 29 | 1146 | .983 | 1975 |
| 20 - 24 | 935 | .983 | 2566 |
| 15 - 19 | 2009 | .983 | 2927 |
| 10 - 14 | 2599 | .987 | 2592 |
| 5 - 9 | 2950 | .992 | |
| 0 - 4 | 2623 | .988 | |
| -5 to -1 | | | |
| -10 to -6 | | | |

TABLE 10
 MIGRATION RATES FOR RURAL FARM MALES,
 BY AGE GROUP, STUDY AREA, 1960-70

| (1) | (2) | (3) | (4) | (5) |
|-----------|---------------------------|-------------------------------------|-------------------------|---|
| Age Group | Est. Surviving in 1970 | 1970 Pop. of Rural Farm Males | Migrants out 1960-70 | Migration Rate for 10 Years 1960-70 |
| 70 -74 | | | | |
| 65 - 69 | | | | |
| 60 - 64 | 1273 | 1027 | 246 | .1932 |
| 55 - 59 | 1415 | 1130 | 315 | .2179 |
| 50 - 54 | 1422 | 1088 | 334 | .2348 |
| 45 - 49 | 1426 | 1289 | 137 | .0961 |
| 40 - 44 | 1389 | 1237 | 152 | .1094 |
| 35 - 39 | 1127 | 1057 | 70 | .0621 |
| 30 - 34 | 920 | 844 | 76 | .0826 |
| 25 - 29 | 1975 | 643 | 1332 | .6744 |
| 20 - 24 | 2566 | 648 | 1918 | .7475 |
| 15 - 19 | 2927 | 2041 | 886 | .3027 |
| 10 - 14 | 2592 | 2392 | 200 | .0772 |
| 5 - 9 | | 2048 | | |
| 0 - 4 | | 1297 | | |
| -5 to -1 | | 1403 | | |
| -10 to -6 | | 1465 | | |

TABLE 11
 FARMING OPPORTUNITIES BY AGE GROUP, 1980

| (1) Age Group | (2) With 1960-70 Migration Rates | (3) With 1960-70 Migration Rates Cut in Half |
|------------------|--|--|
| 70 - 74 | | |
| 65 - 69 | | |
| 60 - 64 | 726 | 831 |
| 55 - 59 | 889 | 1029 |
| 50 - 54 | 877 | 1022 |
| 45 - 49 | 918 | 969 |
| 40 - 44 | 733 | 779 |
| 35 - 39 | 592 | 612 |
| 30 - 34 | 583 | 610 |
| 25 - 29 | 628 | 1316 |
| 20 - 24 | 568 | 1462 |
| 15 - 19 | 1414 | 1724 |
| 10 - 14 | 1184 | 1234 |
| 5 - 9 | 1281 | |
| 0 - 4 | 1338 | |
| -5 to -1 | | |
| -10 to -6 | | |
| | <u>6517</u> | <u>8630</u> |

TABLE 12
 FARMING OPPORTUNITIES BY AGE GROUP, 1990

| Age Group | With 1960-70 Migration Rates | With 1960-70 Migration Rates Cut in Half |
|-----------|---------------------------------|---|
| 60 - 64 | 585 | 669 |
| 55 - 59 | 634 | 733 |
| 50 - 54 | 519 | 605 |
| 45 - 49 | 514 | 543 |
| 40 - 44 | 506 | 538 |
| 35 - 39 | 578 | 597 |
| 30 - 34 | 511 | 535 |
| 25 - 29 | 435 | 912 |
| 20 - 24 | <u>281</u> | <u>723</u> |
| 15 - 19 | 884 | 1078 |
| 10 - 14 | 1222 | 1273 |
| 5 - 9 | | |
| 0 - 4 | | |
| | <u>4563</u> | <u>5855</u> |

TABLE 13
 FARMING OPPORTUNITIES BY AGE GROUP, 2000

| Age Group | With 1960-70 Migration Rates | With 1960-70 Migration Rates Cut in Half |
|-----------|---------------------------------|---|
| 60 - 64 | 346 | 396 |
| 55 - 59 | 355 | 411 |
| 50 - 54 | 358 | 418 |
| 45 - 49 | 502 | 530 |
| 40 - 44 | 443 | 471 |
| 35 - 39 | 401 | 414 |
| 30 - 34 | 253 | 259 |
| 25 - 29 | 272 | 570 |
| 20 - 24 | <u>290</u> | <u>746</u> |
| 15 - 19 | | |
| 10 - 14 | | |
| 5 - 9 | | |
| 0 - 4 | | |
| | <u>3220</u> | <u>4215</u> |

TABLE 14
CROP AND LIVESTOCK LABOR STANDARDS FOR POSSIBLE CHANGES IN A REPRESENTATIVE FARM*

| Month | Total time for cows | Total hrs. for Wheat | Hrs. for Grain | Hrs. for Alfalfa | Hrs. for other hay | Available hours | Hrs. Req. for Cows | Surplus hrs. (deficit) | Available hrs. for Possible Feeding Oper. |
|-----------|---------------------|----------------------|----------------|------------------|--------------------|-----------------|--------------------|------------------------|---|
| January | 250 | 221.67 | | | | 221.67 | 28.33 | 221.67 | 221.67 |
| February | 250 | 221.67 | | | | 221.67 | 28.33 | 221.67 | 221.67 |
| March | 250 | 221.67 | 137.306 | | | 221.67 | 28.33 | 84.36 | 84.36+176=220.36 |
| April | 250 | 221.67 | 164.437 | 4.726 | 3.618 | 221.67 | 28.33 | 48.88 | 48.88 |
| May | 250 | 221.67 | 28.421 | (28.767) | | 221.67 | 28.33 | 198.24 | 198.24 |
| June | 250 | 221.67 | 1167.75 | (28.767) | (22.216) | 221.67 | 28.33 | (969.50) | 198.24 if custom harvest did it all |
| July | 250 | 221.67 | 87.079 | (28.767) | | 221.67 | 28.33 | 134.59 | 134.59 |
| August | 250 | 221.67 | 328.875 | 3.502 | 24.534 | 221.67 | 28.33 | (168.25) | 570 surplus hrs. available to make up the deficit this mo. only |
| September | 250 | 221.67 | 147.937 | 17.169 | | 221.67 | 28.33 | 56.58 | 56.58 |
| October | 250 | 221.67 | 66 | 33.521 | | 221.67 | 28.33 | 122.15 | 122.15 |
| November | 250 | 221.67 | 207.679 | | | 221.67 | 28.33 | 13.99 | 13.99+224=239.99 |
| December | 250 | 221.67 | | | | 221.67 | 28.33 | 221.67 | 221.67 |

Deficit Hours (168.25)
Part-time Labor hrs. 570
Surplus Hours 401.75

* Changes in acreage and livestock numbers were chosen to represent the possible changes in the representative farm used by Bell, Langemeier, and Kasper.

TABLE 15

GOVERNMENT PAYMENTS TO KANSAS FARMERS AS
 A PERCENTAGE OF TOTAL CASH RECEIPTS
 FROM FARMING (INCLUDING GOVERN-
 MENT PAYMENTS)

KANSAS

| <u>Year</u> | <u>Percentage</u> |
|-------------|-------------------|
| 1976 | 1.4% |
| 1975 | 1.1% |
| 1974 | .5% |
| 1973 | 3.4% |
| 1972 | 7.6% |
| 1971 | 8.8% |
| 1970 | 10.2% |
| 1969 | 11.9% |
| 1968 | 13.5% |
| 1967 | 12.7% |
| 1966 | 13.0% |
| 1965 | 14.6% |
| 1964 | 13.7% |
| 1963 | 7.6% |
| 1962 | 7.0% |
| 1961 | 5.8% |
| 1960 | 2.2% |

Footnotes

1. Raney L. Gilliland, comp., The World Almanac and Book of Facts 1978, (New York: Newspaper Enterprise Association, Inc., 1977), p. 606.
2. Paul Gates, Fifty Million Acres: Conflicts over Kansas Land Policy, 1854-1890, (Ithaca: Cornell University Press, 1954), p. 10.
3. Leo M. Hoover, Kansas Agriculture After 100 Years, Kansas Agricultural Experiment Station Bulletin 392, August 1957, p. 10.
4. Roger A. Bell, "Farming Opportunities in Western Kansas in the Future" (Master's thesis, Kansas State University, 1960).
5. J. A. Hodges, Types of Farming Areas, Kansas Agricultural Experiment Station Bulletin 251, August 1930, p. 18.
6. Frank Orazem, Joseph Hajda, and Roger Bell, Implications of Projected Changes in Farming Opportunities in Western Kansas, Kansas Agricultural Experiment Station Bulletin 452, December 1962, p. 57.
7. Ibid.
8. Farm Management, Summary and Analysis Report Kansas 1976, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan, 1977; Farm Management, Summary and Analysis Report Kansas 1970, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan, 1971.
 There are six Farm Management Associations covering the entire state of Kansas with more than 3800 farm families as members (1977). The Associations are part of the educational program of the County Extension Councils and the Extension Service of Kansas State University. Fieldmen are employed to give close attention to the management and marketing problems of the cooperating farm families. Year-end summary reports are made for each Association of the state.
9. Roger A. Bell, "Farming Opportunities in Western Kansas in the Future" (Master's thesis, Kansas State University, 1961), p. 57.
10. U. S. Department of Health, Education, and Welfare, State Life Tables 1959-61 (Washington, D. C.: Government Printing Office, 1966), p. 236-237; U. S. Department of Health, Education, and Welfare, State Life Tables: 1969-71, Volume II, Numbers 1-26 (Washington, D. C.: Government Printing Office, June 1975), p. 17-16 and 17-17.

11. U. S. Department of Commerce, Census of Population, Volume I, Part 18 (Washington, D.C.: Government Printing Office, 1960), p. 18-290 through 18-293.
12. U. S. Department of Commerce, Census of Population, Volume I, Part 18 (Washington, D.C.: Government Printing Office, 1970), p. 18-449 through 18-457.
13. Population, Births, Deaths, Marriages, and Divorces by Number and Rate for Kansas and Each County, 1970, Registration & Health Statistics Services, The Kansas State Department of Health.
14. Ibid.
15. Kansas Agriculture 60th Annual Report with Farm Facts, Developments in Kansas Agriculture for 1976, Kansas State Board of Agriculture, p. 56F.
16. Raney L. Gilliland, comp., U.S. Department of Commerce, U.S. Census of Agriculture 1950, Volume I, Part 13, (Washington, D.C.: Government Printing Office, 1952), p. 87-91; U.S. Department of Commerce, U.S. Census of Agriculture 1974, Volume I, Part 16, (Washington, D.C.: Government Printing Office, May 1977), Table 9, p. 7-636.
17. Marilyn E. Pabst and Edward D. Jenkins, Water-Level Changes in Southwestern Kansas 1940-75 (Prepared by the Kansas Geological Survey and the U. S. Geological Survey, (May 1976), p. 5.
18. Orlan H. Buller, Larry N. Langemeier, and John L. Kasper, Labor Requirements of Western Kansas Irrigated and Dry-Land Crops, Kansas Agricultural Experiment Station Bulletin 593, October 1975.

This study focused on the crop-labor and livestock-labor requirements considering new machinery, technology, and costs of production. Then figures were estimated for irrigation, both sprinkler and flood, and dryland, which varied according to the size of the operation. Within the study, figures were accumulated into a representative farm with both irrigated and dryland acreage.
19. Ibid.
20. U.S. Congress, Senate, Committee on Agriculture and Forestry, Farm and Food Policy 1977. Committee Print, 94th Congress, 2nd Session, 1976 (Washington, D.C.: Government Printing Office, 1976), p. 196.
21. U.S. Department of Agriculture, Farm Commodity and Related Programs, Agriculture Handbook No. 345 (Washington, D.C.: U.S. Government Printing Office, March 1976), p. 4.

22. Ibid., p. 5.
23. U.S. Congress, Joint Economic Committee, The Mobility of Farm Labor, by C. E. Bishop. Policy for Commercial Agriculture, Papers (Washington, D.C.: Government Printing Office, 1957), p. 437.
24. U.S. Congress, Senate, Committee on Agriculture and Forestry, Farm and Food Policy 1977. Committee Print, 94th Congress, 2nd Session, 1976 (Washington, D.C.: Government Printing Office, 1976), p. 7.
25. U.S. Congress, Joint Economic Committee, The Mobility of Farm Labor, by C. E. Bishop. Policy for Commercial Agriculture, Papers (Washington, D.C.: Government Printing Office, 1957), p. 442.
26. Daryll E. Ray and Earl O. Heady, Simulated Effects of Alternative Policy and Economic Environments on U. S. Agriculture, Center for Agriculture and Rural Development, Iowa State University, Card Report 46T, 1976, p. 77 and 78.
27. Ibid., p. 73.
28. Dale E. Hathaway, "Agricultural Policy and Farmers Freedom: A Suggested Framework," Journal of Farm Economics (November 1953): 496.
29. Harold Lobmeyer, "The Nonfarm Income of Kansas Farm Management Association Farmers for Years 1973-1975" (Master's thesis, Kansas State University, 1977), p. 17.
30. Ibid., Table 4-2, p. 32.

FARMING OPPORTUNITIES IN WESTERN KANSAS - REVISITED

by

RANEY LEE GILLILAND

B.S., Kansas State University, 1975

AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Agricultural Economics

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1979

Abstract

This study of farming opportunities in twenty-nine counties of western Kansas was undertaken in order to determine (1) the accuracy of an original study dealing with the same topic, (2) the trend in future farming opportunities in the area, and (3) the major factors affecting these current opportunities.

The first procedure was to determine which of the alternatives determined in the original study most accurately represented the actual trend in farming opportunities. Actual trends were determined by use of the Censuses of Agriculture 1950-1974. These actual trends were compared to the estimated trends 1950-1975 of the alternative which used 1.3 operators per farm and double the 1950-1954 rate of farm size growth. It was found this alternative of the original study was fairly accurate in its projections, except for the 1975 and 1974 comparison years. According to the actual trends, there was an increase in farming opportunities from the 1969 to the 1974 census period. Prosperity in the agricultural sector in the early 1970's was most likely responsible for this increase. The estimates showed a continued decline in farming opportunities from the 1970 to 1975 projections. Comparisons in the various determinants of farming opportunities are shown in Tables 2, 3, 4, 5 and 6 of the study.

To determine future trends in farming opportunities in the twenty-nine county study area it was necessary to follow as closely as possible the types of procedures used in the original study. If other procedures had been used, the two studies would not be useful as an on-going study of farming opportunities in

western Kansas. In the absence of current migration rates, comparison of ten-year movements of age groups were manipulated into the migration rates use throughout the projection period of the study. In other words, the decline in number of a particular age group from one census period to another was manipulated into a migration rate for that age group. The ten-year numbers came from the Census of Population 1960 and 1970 for the rural-farm population in the counties. Migration rates and birth rates were averaged over the study area. Concurrently, births had to be projected. The 1970 birth rate for the area was multiplied times the population to project births in the future. Survival rates were obtained from State Life Tables 1960 and 1970. Projections for farming opportunities were made for 1980, 1990, and 2000.

Throughout the study of this area the author continually looked for factors which would most likely affect farming opportunities. Irrigation and public policy were determined to be the two factors which could have the most impact. Therefore chapters were written to give readers some perspective of the importance of these factors to farming opportunities. Any change in these factors can drastically change the economic outlook of the area. However, the reduction in irrigation water seems to be the most crucial.

In summary, this study found that is is unlikely farming opportunities will increase in the area. The area is too adaptable to large, capital-intensive agriculture. Efficiency in the use of irrigation water will allow more operators per farm and the use of more hired labor. Appropriate public policy, enhancing such things as off-farm incomes, the opportunity for businesses to locate there, and

stability in the agricultural farm market, will help to sustain more farming opportunities. However, the trend of decreasing numbers of farming opportunities will continue to force young rural-farm males and females into other areas. Leaders and planners of this state and of this area must take appropriate actions in order to plan for the economic consequences. Leaders and planners of this state and of this area must realize the consequences of a continued decline in farming opportunities. They, therefore, are responsible to develop and implement proposals which will allow economic goals and opportunities for young Kansans to be realized.