



Analysis of the Conservation Reserve Program in northeastern Montana
by Leroy Carol Rude

A dissertation submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY in Agricultural Economics
Montana State University
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Abstract:

This study is concerned with the effects the Conservation Reserve Program had on controlling production, the physical descriptions of the farm firms that participated both before and during the contract period, the economic effects the Program had on the farm firms and participants, and attitudes of the participants toward the Program. The area of concern is northeastern Montana where there was a greater concentration of participation in the Program relative to other areas of the State.

Most of the data needed to examine the above concerns were obtained by personal interviews of a sample of participants. This together with historic research, and information obtained from people with knowledge about the Program fulfilled the data requirements.

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In most instances this cropland was the least productive land.

Participation in the Program reduced the labor required on the farms which contributed to an increase in off-farm employment. All of the respondents who had off-farm employment found jobs within the immediate vicinity of their farm and there was little evidence of people moving out of their rural community because of participation. Prior to contracting, participants spent considerable money to produce crops but during the contract little expenditure was required to care for the land. Many respondents used this money to up-grade their level of living and to retire debts.

Attitudinal statements indicated that the respondents were highly favorable toward the Program. The area that appeared the most attractive was the continuation of the Program. The areas that seemed the least attractive were the effectiveness of the Program to control production as compared to the Acreage Allotment Program and in comparing the costs of these two Programs. Of all possible responses toward the statements, about 71 per cent were favorable, 23 per cent unfavorable, and six per cent were non-responses.

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IN NORTHEASTERN MONTANA

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LEROY CAROL RUDE

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Approved



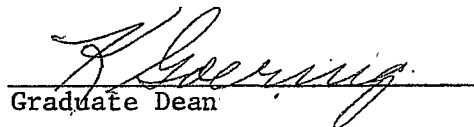
J. M. Conner

Head, Major Department



O. W. Jensen

Chairman, Examining Committee



A. Greening

Graduate Dean

MONTANA STATE UNIVERSITY
Bozeman, Montana

June, 1971

ACKNOWLEDGMENTS

The author desires to express a sincere appreciation to Dr. Clarence W. Jensen, Committee Chairman and former Chairman of the Department of Agricultural Economics under whose guidance, encouragement, and direction this research was completed. Appreciation is also extended to Dr. Franklin S. McFeely, Dr. John Montague, Dr. Dana H. Myrick, Dr. Martin S. Stauber, Dr. Layton S. Thompson, and Dr. Richard O. Wheeler who aided in the organization and editing of this thesis.

Thanks is extended to Dr. Richard J. McConnen, Chairman of the Department of Agricultural Economics who encouraged the completion of this dissertation.

The author appreciates the cooperation of the farmers who participated in the interviews and other people who supplied information and direction in gathering data. Without these sources the study would not have been possible.

Gratitude is extended to the personnel in the Farm Production Economics Division, Economic Research Service, United States Department of Agriculture, who encouraged and promoted this research.

To his wife Bette and children for their encouragement and patience the author extends his sincere appreciation.

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ABSTRACT

This study is concerned with the effects the Conservation Reserve Program had on controlling production, the physical descriptions of the farm firms that participated both before and during the contract period, the economic effects the Program had on the farm firms and participants, and attitudes of the participants toward the Program. The area of concern is northeastern Montana where there was a greater concentration of participation in the Program relative to other areas of the State.

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CHAPTER I

INTRODUCTION

The United States has been plagued with the recurring problem of the over-production of wheat since the early twenties. Except in times of widespread drought, war, and other emergencies, our capacity to produce wheat has exceeded market demands for food uses.

Probably the greatest factor contributing to the surpluses of wheat and feed grains is the rapid advancement of technology. Through the use of more efficient machinery and equipment, improved varieties, fertilizer, and improved farming methods, the production of grain has increased rapidly. The most rapid increases came during times of emergencies. For example, during the second world war farmers were encouraged by high prices to increase their production. Much new land was brought into production and improved techniques were adopted. After the emergency was over, that land was not taken out of production and hence contributed to the growing surplus.

Various farm programs to control wheat production have been in effect for many years. The most common type has been acreage control. Farmers who complied with these programs usually seeded their diverted acres to feed grains if permissible. Because of the increased feed grain acreage, some feed grain crops in the 1950's were considered in surplus and placed under voluntary control. Feed barley was placed in this category in 1962.

The major market demands for wheat are for domestic food, industrial use, feed, and export. 1/ The combined demand function for these four uses of wheat is generally considered inelastic. Therefore a sharp drop in price results in a relatively small change in quantity demanded. Thus, to keep the general price level of wheat relatively high, it was deemed necessary to control production.

The general purchasing power of the people in the United States has been steadily increasing. But the amount spent on foodstuff, especially cereal foods, has not risen in proportion to that spent on other goods. For example, from 1952 to 1965 wheat used for food in the United States only increased from 488.4 2/ to 515.1 3/ million bushels or approximately 5.5 per cent. During the same period the population of the United States increased from 152.0 to 194.6 million or about 28.0 per cent. 4/ This suggests that as people prosper they spend relatively less on staple goods such as those made from wheat and more on luxury goods.

1/ Demand is defined as the various quantities of the product that consumers will take off the market at all possible alternative prices in a given period of time.

2/ Economic Research Service, Wheat Situation, WS-182, (Washington, D.C.: United States Government Printing Office, 1963), p. 2.

3/ Economic Research Service, Wheat Situation, WS-202, (Washington, D.C.: United States Government Printing Office, 1967), p. 2.

4/ Bureau of the Census, Population Estimates, No. 377, (Washington, D.C.: United States Government Printing Office, October 20, 1967).

Another facet of this problem is that farmers have been experiencing a price-cost squeeze. Prices received from grain have fallen in proportion to production costs. Farm budgets indicate that the returns from a 450-acre cash-grain farm in Montana will approximately cover variable and depreciation costs leaving nothing for interest on investment or living expenses. 5/ This condition can only exist for a short period of time as evidenced by the decline in the number of small farms in the State. 6/

Because of these occurrences, farmers have been experiencing a period of adjustment. To offset the price-cost squeeze many have increased their farm size in order to reduce their unit production costs. Since the amount of cropland in Montana has remained relatively stable, indications are that some operators are quitting farming which is evidenced by the decreasing number of farms. 7/ Thus, there appears to be a migration of people from farming into other areas of employment, which in turn could create other problems such as:

5/ LeRoy C. Rude, Unpublished Data for W-54 Regional Wheat Adjustment Study, (Bozeman, Montana: Department of Agricultural Economics, Montana State University, 1966).

6/ LeRoy C. Rude, Projection of Farm Numbers in Montana, 1975-2000, Bulletin 608, (Bozeman, Montana: Montana Agricultural Experiment Station, Montana State University, October, 1966).

7/ Ibid.

whether the farmers are adequately equipped for other employment, whether other employment is available, and if these people move out of the community what effect does this have on its economy?

This study will focus on the Conservation Reserve Program in Montana with emphasis on that segment of the population who placed their entire farm in the Program. This segment was selected because it presents many facets of the agricultural problem. Emphasis will be placed on examining the physical characteristics of the farm firms, determining why owners participated, determining their attitudes toward the Program, and evaluating the effects the Program had on production.

Historical Setting of Farm Programs 8/

Since the beginning of the surplus wheat problem Congress has been attempting to curb production or to find other uses for surplus wheat.

9/ In the early twenties, farm leaders called upon the government for help in bringing about wheat production adjustments consistent with

8/ This is only intended to be a brief historical setting of farm commodity programs with emphasis on those that particularly affected Montana grain producers. Special provisions of the programs for small grain producers are not discussed because of their limited application in the State.

9/ Total wheat minus wheat for domestic use, export, and adequate reserve, equals surplus wheat.

economic demands of the market, more orderly marketing of wheat, and improved returns to wheat producers. These features were included in two McNary-Haugen Acts of the 1920's which were passed by Congress but vetoed by the President.

In 1929 Congress passed the Agricultural Marketing Act. This act established a Federal Farm Board to promote effective merchandising of agricultural commodities. The Board was instructed to promote, finance, and work with cooperative marketing associations. It was assumed that through the cooperatives, farmers could sell their wheat in a more orderly manner, withholding wheat when prices were low and increasing sales when prices rose. The cooperatives were also expected to influence farmers to control production to prevent large surpluses. But due to the economic depression and to a large crop in 1929 coupled with the farmers' need for cash, farmers did not control their production and the wheat surplus increased. The Federal Farm Board started to purchase wheat held by the cooperatives, plus new wheat, but wheat prices were very low and the Board was inadequately funded and in 1931 the Program was about finished.

The Agricultural Adjustment Act was passed in 1933. The objectives included the establishment of a balance between production and consumption in order to restore purchasing power for wheat and other agricultural commodities to their 1909-1914 level. Shortly after the enactment of the AAA, the Commodity Credit Corporation was created to

make non-recourse loans to farmers. These loans were, in effect, government purchase contracts in which the farmer had an option to buy back his produce within a stated period by repaying the loan. Thus, the farmer could take advantage of any price rise above the loan within the stated term of the loan. The loan rate became the price support floor for the commodity. Also during the first year of the Act, base acreages 10/ and normal yields 11/ were determined for each farm so farmers could participate in wheat production adjustment programs if they desired. If they participated, reducing wheat acres or marketings, they were to receive benefit payments or price guarantees. To help finance this, processing taxes were levied against processors who used the commodities. These taxes were declared unconstitutional by the Supreme Court in 1936 and thus ended the Program.

The Soil Conservation and Domestic Allotment Act of 1936 offered farmers benefit payments to encourage them to divert production away from wheat and other surplus crops and into other non-surplus commodities. The idea of soil conservation, seeding cropland to hay or grass, was stressed as a way to divert acreage from surplus production. Although farmers did divert potential wheat acreage to hay or grass

10/ The base acreage is that acreage of wheat normally raised on a farm over the past few years.

11/ Normal yield is current yield expected on a farm taking into consideration the historical yields.

under this Act, they also made use of continually improving technology to increase their yields and total production while reducing acreage.

A new type of price support for wheat was established by the Agricultural Adjustment Act of 1938. Under this Act, price supports were made mandatory rather than discretionary and could range from 52 to 75 per cent of parity. 12/ To control the wheat supply and adjust production to expected market demands, acreage allotments 13/ were implemented. Price supports to farmers were dependent upon compliance with their wheat allotment and penalties were applied to those who overplanted their allotment. The Act also provided for crop insurance, soil conservation, and research on utilization of surplus commodities. Many of the features of this program were retained in the Agricultural Act of 1956.

The Act of 1956 provided that a farmer would receive a supported price for his wheat if he did not seed over a predetermined acreage. This predetermined acreage or acreage allotment was the average of the part three-year wheat acreage history. If a farmer did not comply with

12/ Parity is the relationship between the prices received by farmers for his products and the prices he has to pay for goods and services. During the 1910-14 period this relationship was considered to be 100 per cent and the present use of this concept related back to this period.

13/ An acreage allotment is a portion of a farmer's wheat base. This concept was implemented as a means to reduce wheat acreage and in turn, production.

this regulation, he had to sell his wheat on the open market and he would have his future wheat base acreage reduced by one-third the amount he had overseeded. Whether or not wheat acreage controls would be in effect was determined annually by the farmers. This type of a wheat acreage control program was continued through 1965.

Another phase of the Act of 1956 was to subsidize farmers for shifting cropland to conservation uses. This entailed both the Acreage and Conservation Reserve Programs. Both programs specified that land under contract in the programs could not in any way be used for production unless authorized by the Government. The subsidies for both programs came in the form of direct annual payments. The Acreage Reserve Program was a temporary measure to reduce production of surplus crops. It was designed to last for four years (1956 through 1959), and the length of contract was for one year.

The Conservation Reserve Program was designed as a long-range program. This program was in effect for five years (1956 through 1960) and participants could sign either three, five, or ten-year contracts which stipulated that they would take a certain amount of cropland out of production and put it to some conserving use. Most of the contracted land in Montana was seeded to grass. 14/

14/ A more complete description of the Conservation Reserve Program is presented on page 12.

In 1964 a different type of wheat program was initiated, designed to help maintain the income of wheat farmers. It stipulated that if any farmer voluntarily complied with the provisions of the program he would be eligible to receive domestic and export marketing certificates. Domestic marketing certificates were given for that part of normal production 15/ of the farm wheat allotment which was used for food products consumed in the United States and export certificates for the part to be exported. The certificates had a cash value in addition to the sale price or the price support loan of the wheat and were redeemable at the Agricultural Stabilization and Conservation county offices. Domestic marketing certificates had a value of 70 cents a bushel and export marketing certificates 25 cents a bushel.

Wheat marketing certificates were issued for an amount equal to 90 per cent of normal production on the wheat allotment. Domestic certificates were issued for 45 per cent of this production and export certificates on the other 45 per cent. In order for a farmer to receive his maximum number of certificates he had to seed at least 90 per cent of his allotment. Since certificates were issued on the basis of acres planted for harvest and the normal yield, farmers did not have to produce their normal production to receive their full quota of

15/ Normal production equals the wheat allotment times normal yield.

certificates. In this respect the program had insurance features.

Other provisions of the 1964 wheat program included diversion payments and the choice to plant approved substitute crops on the diverted acres for conservation use. In Montana safflower was the only approved substitute crop. Diversion payments were made to farmer if they diverted an additional acreage from their wheat allotment not to exceed 20 per cent of their farm wheat allotment. The additional acreage was that above the 11.11 per cent they were required to divert in order to comply with the program. The diversion payment per acre amounted to 20 per cent of the county loan rate per bushel multiplied by the normal yield per acre for their farm.

In order for a farmer to be eligible for price-support loans and certificates he had to agree to produce within his farm wheat allotment and any other allotment crops, and meet the Program's conservation-use provisions. Most Montana farmers met the conservation-use provision by summerfallowing the diverted acres.

Next to wheat, barley is generally regarded as the most profitable cash-grain crop in Montana. In 1962 barley was included in the feed grain acreage diversion program. Farmers could receive price-support loans on all their barley production if they diverted 20 per cent of their base acreage to some conserving use with an option to divert an additional 30 per cent of their base. Payments were made on the acreage diverted. The per acre payment for the first 20 per cent equaled the

county support rate times 50 per cent of normal production, for the second 20 per cent it equaled county support rate times 60 per cent of normal production, and for the remaining 10 per cent it equaled the county support rate times 50 per cent of normal production.

The principle change in 1963 in the feed grain program for barley was that farmers received price support payments in addition to price support loans. And the major change in the wheat and feed grain programs in 1965 was that a farmer complying with both programs could raise wheat on his feed grain base and feed grains on his wheat allotment acreage.

The Food and Agricultural Act of 1965 continued the same types of voluntary feed grain and wheat programs in 1966 and stipulated that they would remain in effect through 1969. ^{16/} The commodity programs for cotton, wheat, and feed grains, encompassed in the Act, attempted to strike a balance between production potential and ample supplies, and between adequate farm income levels and reasonable government expenditures. The objective was to provide ample supplies to fill consumers' needs and to meet foreign obligations. It authorized acreage diversion programs to balance production with needs for all three crops with payments to maintain income from the retired acres.

^{16/} Agricultural Stabilization and Conservation Service, The Food and Agricultural Act of 1965, (Washington, D.C.: United States Department of Agriculture, October, 1965).

A valuable addition to the Act of 1965 was the cropland adjustment program. It encouraged longer period of land retirement at lower annual cost. This program also allowed for converting cropland into other uses needed by the expanding urban populations. This would be accomplished by encouraging conservation uses aimed at beautifying the countryside and at preventing water and air pollution and by shifting land to recreational uses such as hunting, fishing, camping, and hiking.

The commodity programs were designed to work toward reduction of surpluses to reduce government outlay. The pricing provisions were intended to encourage maximum domestic use of all three commodities; at the same time the market price support would be around world levels. This would continue the competitive position of feed grains in world markets and would permit the continued export with little or no government subsidy assistance.

Description of the Conservation Reserve Program

The objectives of the Conservation Reserve Program of the Soil Bank were to reduce the stocks of commodities going into government and non-government storage and to promote conservation of land resources.

All farmers raising any kind of crops could participate in the Program and the participants had to put the land to some approved soil conserving use. The government paid the farmers 80 per cent of their

cost of establishing the conserving use, which in Montana was usually a vegetative cover. The participant could not use the contracted land for any kind of production and had to prevent it from becoming a source for spreading noxious weeds.

There were two types of contracts available to farmers, a whole-farm contract and a part-farm contract. The whole-farm contract specified that all cropland in the farm had to be put to some conserving use. In the part-farm contract, farmers specified how many acres they wanted to place in the Program and then put only this amount to a conserving use.

There were two payment rates at which land could be placed in the Program. One was the regular rate, which applied to contracts expiring in three years. The other was the regular rate plus ten per cent of the regular rate, which applied to five or ten year contracts.

Conservation Reserve Program contracts also had diversion and non-diversion payment rates. The diversion rate applied to the acres taken out of production and the nondiversion applied to the acreage that was not taken out of production. In Montana the nondiverted acreage was mainly summer fallow. The diversion rate was the same as the regular rate, or regular rate plus ten per cent depending upon the length of the contract. The nondiversion rate was a specified percentage of the diversion rate. Prior to 1958 the nondiversion rate was 30 per cent of the diversion rate. In 1958 the Agricultural Stabilization and

Conservation Service was authorized to raise the nondiversion rate up to 50 per cent of the regular rate for whole-farm contracts. In 1959 the nondiversion rate was raised again for whole-farm contracts to 100 per cent of the regular rate.

The maximum per acre payment that any farmer could receive was determined by the county Agricultural Stabilization and Conservation Service committee. First, the committee determined average yields for every allotment crop in the county. Then they varied these yields from the county averages according to the relative productivity and farming methods on each individual farm. By this means, a productivity index was determined for each farm. To determine the maximum payment per acre for a given farm, the committee would multiply the county average yield by the productivity index. This product was then multiplied by the National average price 17/ to obtain the maximum rate per acre that could be paid on a given farm. The maximum payment that could be paid on any one farm was \$5,000.

During the first two years (1956 and 1957) of the Conservation Reserve Program in Montana there was little participation. Farmers who

17/ National average price is the average price that farmers received for a commodity in the United States.

signed contracts during this period received payments at or about the regular rate. In 1958 and 1959 after the increases of diversion payments and after farmers had become better acquainted with the Program, there were more applications for contracts than could be accepted with the appropriated funds. At this time the Agricultural Stabilization and Conservation Service employed the following method for accepting applications: At the beginning of the program each farmer was sent notice of what his regular rate would be in case he wanted to participate. Each farmer was free to make application at this rate or at a lower rate. When the county committee had received all applications during a year, the bid rate of each application was divided by the regular rate giving the competitive rating. The applications were then separated into groups.

The first group contained those farmers who made applications the previous year but could not be accepted because of limited funds and had elected to accept a rate based on competitive averages of all applications. The second group contained applications where the competitive ratings were less than 70 percent, the third 70 to 74.9 per cent, the fourth 75 to 79.9 per cent, and on down to the last group, 95 to 100 per cent. In all there were eight groups.

After all eligible applications were grouped, approvals were given starting with the first group and continuing through the successive numerical groups to the extent that funds allocated to the county would

permit. In case applications had the same competitive rating and all these applications could not be accepted, applications within the group were given priority preference in the following order: 18/

1. Applications offering farms on which land was previously placed under contract and that contract was due to expire.
2. Applications offering land which includes all eligible land in the farm.
3. Applications offering land for the longest contract period.
4. Applications offering land which would be devoted to such practices as tree planting for forestry or erosion control, dams for cover protection or for fish, and water and marsh management were given priority over those that were devoted to vegetative cover.
5. Applications offering land at the lowest annual payment rate per acre.
6. Applications offering the largest acreage.

From 1956 to 1960 more than 300,000 farmers in the United States signed Conservation Reserve contracts. 19/ These contracts took approximately 28.3 million acres of cropland out of production.

18/ Commodity Stabilization Service, The 1960 Conservation Reserve, (Washington, D.C.: United States Government Printing Office, July, 1959).

19/ Ronald O. Aines, Release of Land from Conservation Reserve Contracts, Agricultural Economics Report No. 34, (Washington, D.C.: United States Government Printing Office, May, 1963).

Estimates of additional production that would have occurred during 1957 through 1962 in the absence of the Program are shown in Table I.

From 1957 to 1962 the wheat carryover in the United States increased from 908.8 million bushels to 1,321.9 million. 20/ If the Conservation Reserve Program had not been in effect during this period the surplus wheat would have been approximately 22 per cent greater than it was in 1962. During this period the carryover increased at an average yearly rate of 83 million bushels. Without the Conservation Reserve Program it would have increased by 139.3 million bushels per year. From this it may be hypothesized that if the Conservation Reserve Program would have been expanded approximately 40 per cent there would not have been any increase in carryover during this period.

Between 1956 and 1960 there was a maximum of 2,053 Conservation Reserve contracts in effect in Montana. They removed from production approximately 630,000 acres of cropland. More than 1,500 of these were whole-farm contracts involving around 495,000 acres. The cost of removing this land from production for one year was about \$5.7 million.

The Program started rather modestly in Montana with relatively few three-year contracts and with the emphasis on the five-year

20/ Economic Research, Statistical Reporting, Agricultural Research, and Foreign Agricultural Services, Handbook of Agricultural Charts, 1964, Agricultural Handbook No. 275, (Washington, D.C.: United States Government Printing Office, September, 1964), p. 66.

TABLE I. ESTIMATE OF ADDITIONAL PRODUCTION THAT WOULD HAVE OCCURRED IN ABSENCE OF THE CONSERVATION RESERVE PROGRAM, UNITED STATES, 1957-1962.*

Crop	Unit	Estimated Production Avoided (000)
Corn	bu.	857,126
Wheat	bu.	283,254
Cotton	bales	2,123
Peanuts	lbs.	600,416
Rice	cwt.	855
Tobacco	lbs.	78,687
Oats	bu.	646,210
Barley	bu.	190,972
Soybeans	bu.	97,183
Sorghum grain	bu.	675,242
Flaxseed	bu.	18,682
Dry edible beans	cwt.	3,625
Irish potatoes	cwt.	34,016
Hay and pasture (hay equiv.)	tons	32,070

* Source: Soil Bank Division, Agricultural Stabilization and Conservation Service, United States Department of Agriculture, Washington, D.C.

Production adjustment for 1957 through 1961 is based on each respective year's crop yields, adjusted for location and quality of the reserve acres; 1962 estimate is based on recent average yields adjusted for location and quality of land in the Program.

contracts. The big year in terms of number of contracts was 1959 after the diversion rate was raised to 100 per cent of the regular rate for whole-farm participation. Those contracting in 1959 appeared to be more enthusiastic and had less misgivings about their decisions, as evidenced by a large proportion of ten-year contracts.

In Montana the average cropland acreage of whole-farm contracts was approximately 335 acres and part-farm contracts was about 295 acres per farm. This probably indicates that the amount of acreage in any one contract was influenced by the \$5,000 limitation. Most of the participation occurred in northeastern Montana, where farms are relatively small and yields are relatively low as compared to most other areas of State.

Determining the effects that the Program had on production in Montana is difficult due to the lack of information. But apparently because of the relatively high average payment rate of \$8.30 per acre for part-farm contracts compared to about \$9.30 per acre for whole-farm contracts, it indicates that a much larger number of crop acres than summer fallow acres went into the Reserve Program from part-farm contracts. This, in turn, suggests that many of the farmers prior to contracting were partially following a double cropping system. If this was the case, the farmers probably contracted enough acreage at the regular rate so that their planted acreage would be the same as their summer fallow acreage. The crops most likely to be taken out of

production would be those producing the least income.

Most of the wheat acreage that was taken out of production was by whole-farm contracts. Montana's wheat allotment during the 1956-1960 period was approximately 4,020,000 acres. The Conservation Reserve Program reduced this acreage about four per cent and decreased production about three million bushels during its peak year.

Previous Studies

In 1957 the Farm Economics Research Division made farm surveys in selected areas of six states to determine the effects of the Conservation Reserve Program. ^{21/} The states included Maine, Wisconsin, South Carolina, Texas, South Dakota, and Oregon. More than 1,000 farm operators were interviewed of which about half were participating in the Program. The findings indicated that the Program was helping many farmers make adjustments in their farming operations and was speeding up adjustments already in progress. Payments under the Program appeared to represent a reasonable return on investment in land but did not compensate farm operators for reductions in earnings of labor, machinery, and other resources. The major reason among the older farmers for

^{21/} Agricultural Research Service, The Conservation Reserve Program of the Soil Bank, Effects in Selected Areas, 1957, Agriculture Information Bulletin No. 185, (Washington, D.C.: United States Government Printing Office, March, 1958).

participating was that it helped them to retire and still get an income from their land. Others found it advantageous to put the land in the Program and find off-farm employment, and some utilized the Program to reduce both the size of their farming operations and their need for hired labor. Most of the farmers who did not participate indicated that they needed all their cropland to operate efficiently. Payment rates needed to be higher before participation would be profitable for most farm operators who work full-time on their farms.

Through 1957 about 1.5 per cent of all cropland in the United States was in the Conservation Reserve Program. Farmers indicated that this land was slightly lower in productivity than other cropland. Many of the farmers used the Program to get permanent pasture established to use for grazing when contracts expire. It was anticipated that participation would increase as more farm people became acquainted with the advantages of the Program.

A report of the Secretary of Agriculture discussed the total national operation of the Soil Bank Program, with emphasis on the 1960 Program activities. ^{22/} Estimates were presented of the total effect of the Program on production of major crops. The discussion emphasized the

^{22/} Supplemental Report of the Secretary of Agriculture on the 1960 Soil Bank Conservation Reserve Program, Enlarging the Preliminary Report of January 13, 1961, (Washington, D.C.: United States Department of Agriculture, March, 1961).

success of the Conservation Reserve Program in establishing cover on erosive lands in the Great Plains, and speculated about the probability that much of this land would remain in grass.

In 1961 Bailey and Aines made a study to determine how wheat farmers would adjust to various farm programs. 23/ A section of this study discussed the Conservation Reserve Program. It indicated that the Reserve Program presented a different type of decision for the farmer than either the acreage allotment or marketing allotment programs. In the latter two programs the choice would be among crops within the present scale of farming operations. The Conservation Reserve offered the choice of reduced scale of operations, or of quitting farming. The farmer would need to consider what productive use he could make of his time and the capital that would be released from farming. He also had to make a decision as to the amount of participation that would be most profitable to him.

Aines made a nationwide mail survey in 1961 to obtain information on expected use of land under contracts expiring December 31, 1961. 24/ He also made a personal interview survey in six selected areas of

23/ Warren R. Bailey and Ronald O. Aines, How Wheat Farmers Would Adjust to Different Programs, Production Research Report No. 52, (Washington, D.C.: United States Government Printing Office, May, 1961).

24/ Aines, Op. Cit.

Minnesota, North Dakota, and Texas to gather more detailed information. His findings indicated that the Conservation Reserve Program would result in considerable land-use adjustments, with more adjustments taking place in areas with livestock than in cash crop farming areas. Farmers interviewed who were planning to make a permanent land-use adjustment from cultivated crops to grassland indicated that this land was of lower value and lower yield. The major crop which farmers intended to produce on their released land was feed grains. This was largely because nearly half this land was used to produce feed grains before being put under contract and therefore retained its feed base upon release. Farmers indicated that only a small amount of the released land would be returned to wheat production. In total the acreage of land going back into feed grains and wheat was relatively small.

The interest in new or continued land retirement contracts varied widely between the six areas studied. Farmers indicated that at diversion rates equal to or slightly above rates of their expiring contracts, they would recontract from 43 to 133 per cent as much land as that which would be coming out of contract. Farmers with livestock responded favorably to a land retirement program which would allow grazing at a reduced payment rate.

A study made in North Dakota included some of the major items this

study proposes to examine. ^{25/} In that study 59 participants with whole-farm contracts were interviewed. Their farms average 324 acres in size with an average of 246.5 eligible acres in the Soil Bank. Fifty of the farms were owner-operated and the owners averaged 52 years of age. Six of the 35 farmers who lived on their farms before placing them in the Soil Bank moved off the farms, and 13 of the 59 owners had retired. Among the primary reasons for placing farms in the Soil Bank, 44 per cent emphasized income, 37 per cent health and retirement, and 19 per cent other. The pattern of contract termination showed 13.3 per cent of the acreage emerging in 1963, 17.2 per cent in 1967 and 1969, and 31.9 per cent in 1968. This indicated a heavier proportion of long-term contracts than the national pattern, in which 40 per cent emerged in those last three years and the rest earlier. The results showed a slight increase in net income per farm under the Soil Bank, mostly due to off-farm employment. Farmers emphasized increased stability of income as the major advantage of participating. Eighty-three per cent of the farmers said they would be willing to renew their contracts with the same payments, and only 3.4 per cent would not renew.

In a Nebraska study a survey was made of both participating and

^{25/} Fred R. Taylor, Laurel D. Loftsgard, and LeRoy W. Schaffnew, Effects of the Soil Bank Program on a North Dakota Community, Agricultural Economics Report 19, (Fargo, North Dakota: Department of Agricultural Economics, Agricultural Experiment Station, North Dakota State University, May, 1961).

non-participating landowners. ^{26/} A comparison indicated that the participants were slightly younger, a smaller proportion were actively engaged in farming, fewer were living on the farm, and a higher proportion had non-farm incomes of more than \$500. The farms of the participants average about 35 per cent larger than the non-participants but the cropland was only about 48 per cent as valuable. A comparison of livestock enterprises showed that 75 per cent of the participants and 53 per cent of the non-participants had some kind of livestock. Owners who did not participate had more productive farms, more intensive farm operations, more invested in land and machinery, and a higher percentage of land under cultivation.

As in the North Dakota study, a large proportion of the participants were retired or semi-retired. Other characteristics included off-farm employment, absentee landowners, and farmers who owned land that was not convenient to farm. The primary reason for participating was to increase farm income. About 85 per cent of the non-participants indicated that they could make a greater return from farming, and about seven per cent said they were not well informed about the Program.

A study in New Mexico, like the one in Nebraska, indicated that whole-farm participants were older than either the part-farm and non-

^{26/} Ralph D. Johnson, The Conservation Reserve Program in Nebraska, SB 470 (Lincoln, Nebraska: Nebraska Agricultural Experiment Station, University of Nebraska, February, 1962).

participants. 27/ The major reason given for participation was prolonged drought and hopes to raise their farm income. Other reasons included conservation, shortage of labor, health, and retirement. The principal reason for not participating was that they could make more money from farming.

More than 60 per cent of the New Mexico participants planned to leave their Conservation Reserve land in permanent vegetation after contract termination. Less than 15 per cent intended to produce crops and the rest were undecided. About 86 per cent of the participants would renew their contracts if given the opportunity. Of those that would not renew at their present rental rates, nearly half would at increased rates.

The average size of the whole-farm contracts was about 290 acres and of the part-farm contracts the average was about 360 acres. The author indicated that many of the part-farm participants were on large farms that received the maximum rental payment of \$5,000 and had cropland in excess of the contracted acreage.

A study made in Georgia was very similar to those made in the

27/ Marlow M. Taylor, The Conservation Reserve Program in New Mexico, Research Report 54, (Albuquerque, New Mexico: Agricultural Experiment Station, New Mexico State University, May, 1961).

previously mentioned states. ^{28/} Objectives were to differentiate the characteristics of the participants and non-participants, and to determine the effects of the Program on crop and livestock production and on resources. Major reasons for participating were hopes for a larger income, to establish conserving crops, poor health, or advanced age. For those not participating the reasons were the belief that the conservation reserve would be less profitable than other uses of the land, or a lack of understanding the Program. In this area, the average age of the non-participants was three years older than the participants. More participants than non-participants resided off their farm and were engaged in part-time farm or full-time off farm work. The Program caused very little adjustment in livestock production on most sample farms. Approximately 60 per cent of the contracted acreage was expected to remain in vegetative cover or trees, and about six per cent was expected to go back into crop production.

Research Problem

Farmers have been experiencing a continuous period of adjustments and have been faced with making land-use decisions for many years. Probably the greatest economic pressure exerted against them has been

^{28/} W. C. McArthur, The Conservation Reserve Program in Georgia, Its Effects in the Piedmont and Coastal Plain, ERS-31, (Washington, D.C.: Economic Research Service, United States Department of Agriculture, December, 1961).

the squeeze caused by increasing costs and declining prices. Because of this situation farms are continually growing larger and fewer in number. This suggests that many of the small operators are finding themselves on uneconomical units and are going out of business.

Montana's largest cash-grain crop is wheat and barley is second. Some of the other important grain crops raised in the State include rye, flax, and oats, but the amounts of these produced are relatively minor in comparison to wheat and barley. Both wheat and barley have been considered as surplus crops and have been included in production control programs. To derive benefits from these programs farmers have had to reduce the acreage of these crops. The diverted acres were generally put to some conserving use or else used to produce non-surplus crops. But the number of non-surplus crops that can be profitably raised in Montana are relatively few in comparison to other states.

The advent of the Conservation Reserve Program of the Soil Bank presented a unique opportunity to study several aspects of the farm problem. The Program started rather modestly in Montana with relatively few three-year contracts and with emphasis on the five-year contracts. The big year in terms of number of contracts was 1959. Those that contracted in 1959 seemed more enthusiastic and had less misgivings about their decisions, as evidenced by a large proportion of ten-year contracts. The number of whole-farm, five-year contracts that terminated in 1963, indicates that important decisions were faced

during 1963.

The major concern of this study is to determine what economic effects whole-farm participation in the Conservation Reserve Program had on farm firms in Montana, what prompted these firms to participate, what adjustments were made because of participation, and what their plans were after contracts had terminated. It is hoped that the results from this investigation can be used as an aid to help formulate policy decisions regarding possible new land retirement programs.

Objectives

The general objective of this study is to survey and analyze the individual and aggregate problems involved in adjusting to participation in the Conservation Reserve Program, and those problems encountered upon termination of contracts. The specific objectives are to:

1. Determine the physical characteristics of the farm firms that were placed under contract.
2. Identify the circumstances that influenced the decision to enter the Conservation Reserve Program.
3. Determine what adjustments in resource use and family living and other activities resulted from participation.
4. Explore the plans, expectations, and attitudes with respect to contract termination.
5. Determine participants' subjective appraisal of the Conservation Reserve Program.

CHAPTER II

PROCEDURE

Data from the Agricultural Stabilization and Conservation Service were compiled to complete a general description of the Conservation Reserve Program in Montana. From this was separated the segment of concern in this study--the dryland farms in the Great Plains portion of the State.

There was a high concentration of contracts terminating in Montana in 1963 and 1968. To supplement secondary data, it was decided that a moderate sample of whole-farm participants from the terminal year 1963 be surveyed during the spring of 1963. At this time these participants were in the process of making land-use decisions. If they decided to turn the land back into cropland they would probably start working that land during the summer of 1963 so it would be ready for either fall or spring planting. If the land were to remain in grass, plans would be made for utilization by livestock.

December 31, 1963, was the termination date for 413 whole-farm contracts in Montana. Of these 413 contracts, 235 were in a ten-county area in northeastern Montana. From these ten counties, the five counties of Dawson, McCone, Richland, Roosevelt, and Sheridan were selected to represent the variation in characteristics of the area. These five counties contained 184 of the whole-farm contracts expiring in 1963 or about 44 per cent of the State's total.

An intensive survey in the Great Plains portion of Montana promised to be more meaningful than covering a larger, less homogeneous area. The concentration of Conservation Reserve participation in northeastern Montana provided for economy in the survey. Smaller sizes of farms and relatively lower yields in this area as compared to other undoubtedly contributed to this concentration because these characteristics seemed to invite greater participation. Whole-farm participation, which requires more drastic adjustment both at the inception and termination of contracts appeared of greater significance in terms of management decisions than part-farm participation. The greater changes made by whole-farm participants in type and amount of production, mobility of resources, and sources of income have a larger influence on the farming and related economics of an area.

Description of the Study Area

Topography, Soils and Climate

The northeastern area of Montana is typical of the Great Plains in that it is treeless, slopes generally to the east, and has large areas of fairly level plains. Major variations from the plains topography are the river valleys and associated breaks and badlands, and some fairly conspicuous ridges, plateaus, and buttes. Most of the area has been glaciated and the dark brown soils are the most prevalent.

Along the western and southern parts of the area the chestnut soils

are common. The topography is often favorable for cropping, but the light color is indicative of the dry climate in which these soils have been formed. Crop yields on chestnut soils are persistently low and highly variable. All soils in the area might contain, in various degrees, unfavorable farming characteristics such as a rugged topography and stoniness.

Temperatures are relatively low during the winters and high during summers. Lows of minus 20 degrees and highs of 100 degrees are not uncommon. Usually, the last killing spring frost occurs in May and the first killing fall frost in September with the average growing season being about 128 days.

Average annual precipitation varies among the weather reporting stations within the area, ranging from about 11 to 16 inches. Approximately half of the annual precipitation comes during the months of May, June, and July. 30/

Type of Farming

Because of the relatively short growing season, farmers are limited in the types of dryland crops they can raise. Of these, wheat is by far the most predominant with the spring varieties being more common than the winter. Next in order of importance is barley with

30/ Climate and Man, Yearbook of Agriculture, (Washington, D.C.: United States Government Printing Office, 1941), pp. 955-961.

miscellaneous crops such as oats, flax, rye, and safflower utilizing the remaining acreage. Because of the low and highly irregular rainfall, in addition to other crop hazards such as insects, diseases, and hailstorms, yields are highly variable and relatively low as compared to most other areas of the State. The most typical dryland grain operation is crop fallow where half the cropland is summer fallowed each year to conserve moisture and control weeds. Irrigation is generally confined to the suitable land adjacent to the Missouri River and its tributaries and the number of acres irrigated is very small in comparison to the total cropland acres in the area.

A large proportion of the land that is not used for crop production is usually unsuitable for cultivation and has remained in native grasses. When feasible this acreage is used for livestock production. Most of the livestock enterprises are extensive in nature, requiring a larger acreage of native pasture for summer grazing and very little labor. Frequently supplemental pasture is provided by grain stubble after harvest. Very little of the cropland acreage is used only for livestock production. During the winter months when grazing is limited because of shortage of grass and/or because of the severity of the winter, livestock are fed hay and in some cases hay is supplemented with a grain ration.

Of the livestock raised in the area, beef cattle are by far the most predominant. Sheep are next in order of importance followed by

dairy cattle which are comparatively minor.

The predominant types of farms in the area are cash-grain and grain-livestock. The number of farms producing only livestock are relatively few as compared to the other two types. Since a large part of the untillable land is intermingled with cropland, practically all farms have some acreage that would be suitable for grazing.

It appears that whether or not an operator has a livestock enterprise is determined by total farm income and the relative amount of income derived from each of the crop and livestock enterprises. For example, a farmer who realizes an average gross return of \$4,000 per year from his cash crops and has the facilities to support a small livestock operation will be more apt to do so than an operator who averages \$12,000 a year from cash crops and has the same facilities for livestock.

The Schedule

Information secured in the survey covered the following five general areas (intermingled in the schedule for convenience in interviewing): (1) General information including identification and description of farm and farm enterprises immediately preceding contract; (2) Adjustments made as a result of contracting; (3) Factors, pro and con, that led to the decision to contract, including terms of contract; (4) Plans for adjustments after termination; and (5) Subjective

