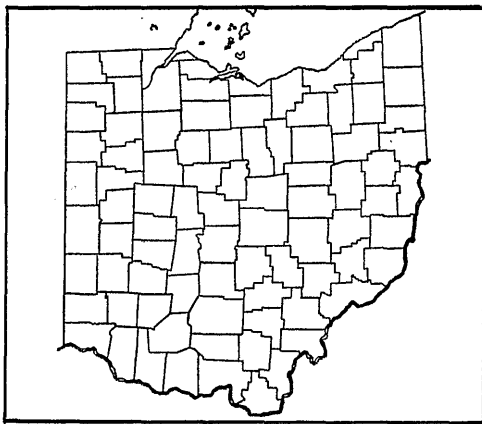


MAJOR ECONOMIC IMPACTS
of the
CONSERVATION RESERVE
on
OHIO AGRICULTURE
and
RURAL COMMUNITIES



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SUMMARY OF FINDINGS

New technology has enabled farmers to boost total output faster than population has increased. Farmers have had difficulty adjusting production downward quickly in response to lower prices, due to the complex nature of farming.

The Conservation Reserve program was developed to help solve this problem. It was started in 1956 and expanded in 1959, but Congress did not provide for new contracts for the 1961 crop year.

Major impacts of the Conservation Reserve program, as indicated by the Ohio study, are as follows:

1. The program encouraged the movement of people out of active farming, but it has not increased the non-farm labor force. Thirty per cent of the participants interviewed were older persons, formerly full-time farmers who wanted to retire. They now are dependent on the program payments, Social Security, and miscellaneous other sources for living.

Part-time farmers accounted for about 50 per cent of the participants. They were already holding off-farm jobs prior to consigning their land to the Reserve and are leaving the agricultural labor force.

Widows were the other large group of participants. In most cases, these units were small and the cropland had been farmed by a neighbor along with his regular operation.

2. The land in the Conservation Reserve, if it had been in production, would have increased the supply of corn, wheat, oats, and soybeans in Ohio by 3.0 to 3.5 per cent last year. In Ohio, 4.3 per cent of all the cropland was consigned to the program in 1960. Thus, the amount of reduction in output was about three fourths as large as the percentage of the land enrolled.

Average yields per acre for corn, wheat, soybeans, and oats on participating

farms were about 98 per cent as great as the average yield on farms in the area which did not participate. The proportion of cropland acreage planted to row crops was somewhat lower on participants' farms than on farms of non-participants.

Projecting these relationships to the United States as a whole, the increase in farm commodities that would have been produced in the absence of the program would have been somewhat over 4.5 per cent of total United States production. About 6.3 per cent of the cropland in the United States was enrolled.

3. If the program had not been in effect, there would have been substantially lower farm prices, unless all the extra production had gone into government storage. Most likely, in the absence of the program, a considerable amount would have gone into government storage, but the remainder would have been placed on the market, reducing farm prices below levels which prevailed.

4. The family income (farm and non-farm) of participants increased an average of \$285 or 7 per cent in 1960 above the year prior to participation. Net farm income (including Conservation Reserve payments) declined, but increases from other income sources offset this decline.

5. The value of farm products held off the market in Ohio as a result of the program in 1960 amounted to about 1.7 per cent of gross cash farm receipts of all farmers. The amount withheld, as a percentage of total farm sales, was somewhat below the crop reduction, because marketings of some of the grain and livestock commodities were planned for the next crop production year.

6. In general, in communities or states with 6.3 per cent or less of the cropland enrolled in the program, there was an increase in the flow of money. In communities with much higher percentages enrolled, the flow of money into the community probably declined. The restriction imposed by Congress that no county or community could enroll more than 25 per cent of the cropland reduced the impact on some communities.

7. The impact of the program on suppliers of production items used by farmers appeared as follows:

Wheel tractor sales were affected very little.

Gasoline expenditures as a result of the program in 1960 declined a maximum of 3.3 per cent of the total possible sales to all farmers for use on cropland in Ohio. This reduction in fuel sales may have been partially offset by participating farmers using their autos more extensively due to increased income.

Fertilizer tonnage sold in Ohio increased in 1959, the first year of the expanded Conservation Reserve program. Total weight of nutrients in the fertilizer increased in 1957 and 1958, although a slight decline occurred in 1959. Potential sales were reduced slightly.

8. The Conservation Reserve increased the amount of money available for farm family living. Most of the increase in disposable income of participants probably was spent for consumer goods.

9. Tax collections by local Ohio governments were not affected much by the program, since their revenue comes from property taxes. Because of increased family income, sales tax, as a major source of state government revenue, probably increased. Gasoline tax revenues to state government and federal income, excise, and luxury taxes probably all increased because of increased family income.

These changes are encouraging adjustments that need to be made in the use of resources to improve farm incomes and reduce surpluses.

THE CONSERVATION RESERVE

As of July 15, 1960, the Conservation Reserve program had enrolled 28,659,973 acres or 6.3 per cent of the total cropland in the United States. This acreage was consigned by 306,182 individual contracts. The annual rental payments amounted to \$339,546,311 in 1960.¹

¹ Agricultural Statistics, United States Department of Agriculture, Washington, D. C., 1960, p. 530.

In Ohio, there were 524,785 acres of cropland consigned to the Conservation Reserve in 1960.² This was 4.3 per cent of the total cropland. The 8,959 contracts in effect during 1960 included 8,129 "whole" farm units.³ These "whole" farm units enrolled 95 per cent of the cropland. Only about 9 per cent of the farms and five per cent of the cropland were "partial" farm units.

The Soil Bank Act was passed in the late spring of 1956. Its major objectives were to reduce production of farm commodities, to improve farm income, and to promote conservation of the nation's land resources. The Soil Bank was established in two parts -- the Acreage Reserve and the Conservation Reserve. These two parts of the Soil Bank Act were distinctly different in their operation.

The Acreage Reserve

The Acreage Reserve phase was designed primarily to reduce production of the "basic crops." The "basic crops" as defined by 1938 legislation included corn, wheat, cotton, rice, peanuts and most types of tobacco. The Acreage Reserve phase of the Soil Bank Act was applicable in Ohio for corn, wheat, and tobacco. Under this phase of the program, farmers who agreed to reduce their acreage of the "basic crops" below their acreage allotment were eligible to receive a payment to compensate them for the lost production. Farmers entered into one-year contracts. No crop could be harvested from the Acreage Reserve area nor could the land be grazed. Noxious weeds had to be controlled. In contrast to the Conservation Reserve, the Acreage Reserve provided for retirement of small parts of farms at relatively high payment rates per acre. The Acreage Reserve was discontinued at the end of the 1958 crop year.

² Ohio Agricultural and Stabilization Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio

³ "Whole" farms are those which have all eligible cropland on the farm in the Conservation Reserve.

The Conservation Reserve

The Conservation Reserve phase was greatly expanded in 1959. It is a long-term voluntary program designed to reduce the production of farm commodities to market demands and improve farm incomes. At the same time, it provided farmers with the opportunity to increase the conservation of soil, water, forest, and wildlife resources.

To accomplish these goals, farmers agreed (1) to reduce the acreage of cropland harvested for three to ten years, (2) to establish approved permanent vegetative cover of grass, trees, ponds or wildlife, (3) not to permit grazing of the designated cropland, (4) not to harvest any crop from the land consigned, except wildlife or timber under good forest management, (5) to prevent the spread of noxious weeds, and (6) to comply with acreage allotments.

In return, if the cooperator requested, the Federal government shared the cost of establishing the conservation practice if the contract was from five to ten years. Ten-year contracts were required for cost sharing when trees were the conservation practice. Three-year contracts were limited to the eligible cropland on which an approved vegetative cover was growing on the designated acreage at the time of the contract. Within these limits, the length of the contract was at the option of the producer.

The acreage allotment history was protected if acreages of the allotted "basic" crops were diverted to the program. This protection extends for a period equal to the length of the contract after the contract expires if approved cover is maintained on the land.

The Agricultural Stabilization and Conservation Service of the United States Department of Agriculture was given responsibility for the administration of the program.

The payment rates for land in Ohio outlined in the 1959 Conservation Reserve

program and also effective for contracts entered into during 1960 were:⁴

1. The basic average annual payment rate in Ohio was \$19 per acre.
2. The Ohio Agricultural Stabilization and Conservation Committee established average per acre annual payment rates for counties on the basis of land productivity ranging from \$14 to \$22.50 per acre. (Map 1)
3. Each county Agricultural Stabilization and Conservation Committee established a maximum annual payment rate per acre for all owners applying for the program. These individual farm maximum payment rates were established on the basis of relative productivity of the land, farm rental rates, and agricultural land values. The individual farm maximum payment rates could vary from 50 per cent to 150 per cent of the average county maximum annual payment rate.
4. The regular maximum annual payment (diversion rate) for a farm was applicable to the Conservation Reserve area (a) where Soil Bank base crops had been growing (row crops and small grain), or (b) when all the eligible cropland on the farm was placed in the Conservation Reserve.
5. A lower annual payment (non-diversion rate) amounting to 50 per cent of the regular maximum annual payment rate was applicable when land was being diverted from hay or rotated cropland pasture to the Conservation Reserve.
6. When all eligible cropland on the farm was placed in the Conservation Reserve program for five to ten years, farmers earned a full regular payment rate plus a 10 per cent premium for placing all their eligible acreage in the program.

Of the 8,959 contracts in effect in Ohio during 1960, 450 were entered during the 1956-58 period. After discontinuing the Acreage Reserve in 1958, the expanded Conservation Reserve enrolled another 5,341 farms in 1959 and 3,168 more farms in

⁴ Commodity Stabilization Service, County Conservation Reserve Handbook, 1-SB, Amendment 23, United States Department of Agriculture, Washington D. C., September 18, 1958.

1960. Factors other than discontinuing the Acreage Reserve which probably contributed to the larger sign up include: the declining net incomes of farm people, recent eligibility for Social Security, desire to make adjustments in employment or retirement, increases in annual payment rates per acre, increased appropriations by Congress to make the increased rates possible and the desire of Congress to expand the program. The decline in participation in 1960 in Ohio was due to reduced appropriations.

The percentage of total cropland is shown in Map 2. Largest percentages per county follow a diagonal line from Southwestern to Northeastern Ohio. This area is the more industrialized and urbanized area of the state.

The lower percentages of total cropland in the Conservation Reserve generally appear in Northwestern Ohio, which is in the Corn Belt and in the Ohio River area. In Western Ohio, the counties with the higher percentages of land enrolled are relatively near industrial cities. In Southeastern Ohio, the low percentages occur along the Ohio River where the topography is generally hilly and cropland acreages per farm are usually small. In some cases in Southeastern Ohio there are few off-farm employment opportunities.

OBJECTIVES OF THE STUDY

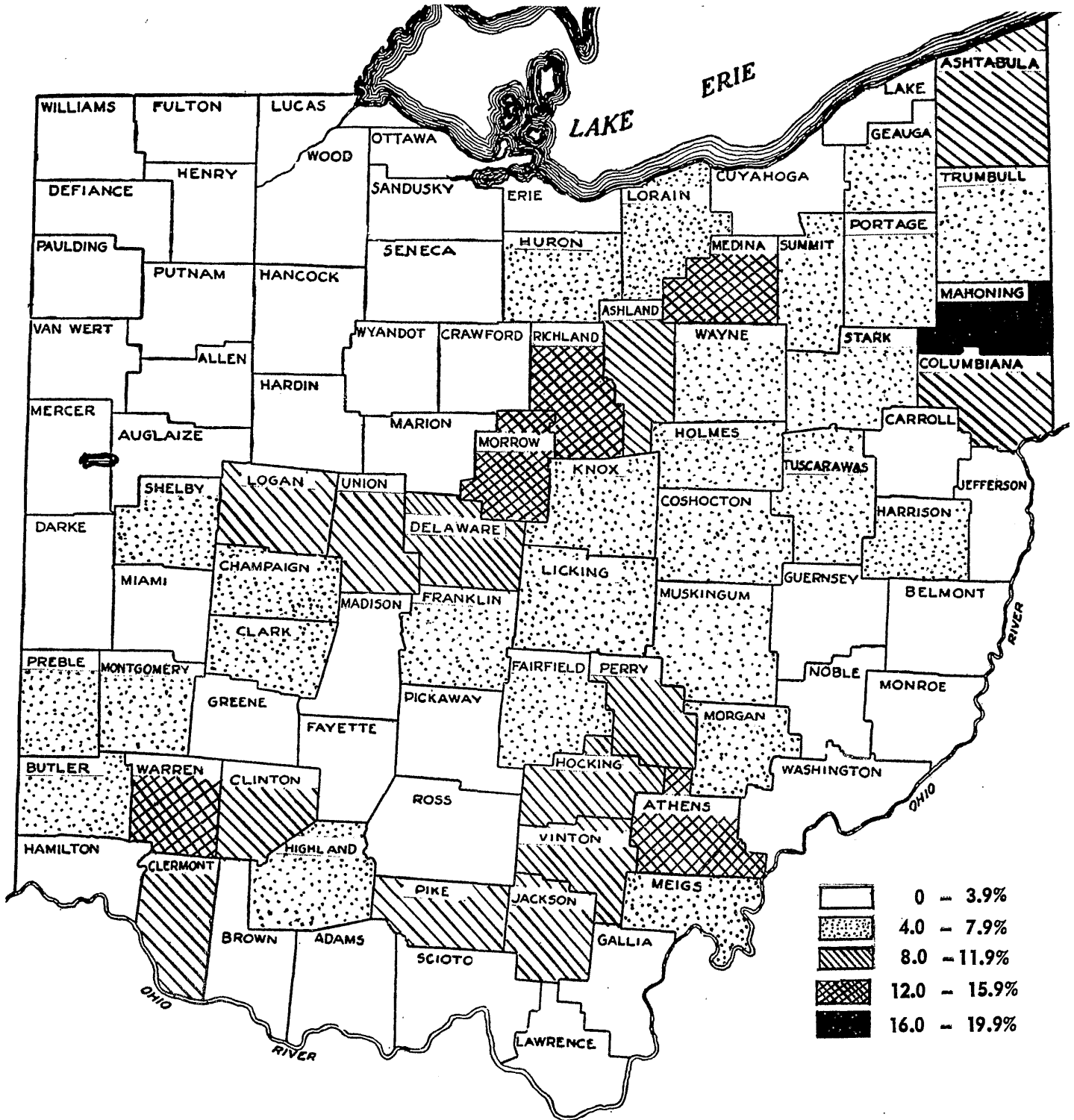
An extensive voluntary program of removing land from production raises many questions concerning the impact of the program. Questions revolve around the impact on farm families' income, on the business sector of the community, on the changes in the use of resources of participating families, and on the effectiveness in reducing production. Other questions raised are related to the characteristics and types of farms and farmers participating and reasons they participate. The general objective of the study was to measure the magnitude of these impacts in Ohio.

The specific objectives of this study were to determine:

1. The characteristics and type of farm and farming operation attracted to

MAP 2

Percentage of Cropland in the Conservation Reserve by Counties, Ohio, 1960



Source: Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio

this voluntary land retirement program.

2. The degree of attainment of program objectives of reducing production of farm commodities and increasing conservation of natural resources.
3. The impact on some selected farm related businesses and on the local economy in general.
4. The effects on the adjustment of land and labor of participating farmers and their families and the effects on farm income.

SOURCES OF DATA

The data for the study came primarily from a survey of farmers in three counties in Ohio and from secondary sources, particularly the Census of Agriculture, crop estimates, and from A.S.C. reports.

The data obtained directly from farmers came from a survey conducted in Hardin, Knox, and Hocking Counties. A random sample of 120 farmers was drawn from a list of farmers participating in the Conservation Reserve program in these three counties. Farmers were contacted in the summer of 1960. Data were obtained on the characteristics of individual farm operators and the farm before and after participation in the program. These data were used along with secondary data to make aggregate estimates of program impacts on farm families, farm production, and the rural economy.

Hardin County is in the Northcentral part of Ohio. The entire area was glaciated and the soil is of limestone origin. The southern part of the county is level to gently rolling while the northern part is flat. The county seat town is Kenton and had an estimated population in 1960 of 8,747.⁵ Average gross receipts per farm in 1959 were \$8,022, or 48.6 per cent above the state average.⁶ Largest gross farm income sources were corn, hogs, cattle, and soybeans.

⁵ United States Bureau of Census, Census of Population, 1959 Ohio Preliminary, United States Department of Commerce, Washington, D. C., 1960.

⁶ M. G. Smith, et. al., 1959 Ohio Farm Income, A. E. 314, Department of Agricultural Economics and Rural Sociology, Ohio Agricultural Experiment Station, Wooster, Ohio, p. 16.

Hocking County is in the southeastern part of Ohio. The area was unglaciated and the soil is of a sandstone and shale origin. The county is very hilly with very little level land except in narrow stream valleys. Logan, the county seat, had a 1960 population of 6,325.⁷ Average gross income per farm in 1959 was \$1,874.⁸ Cattle, dairy, hogs and poultry were the largest sources of income.

Knox County is in the northeastern central part of Ohio. The soil is a shale and sandstone origin. The topography is rolling rather than hilly. There are considerable areas of bottom and terrace land. The 1960 population of Mt. Vernon, the county seat, was 13,238 people.⁹ Dairy cattle, hogs, and poultry were the major sources of gross farm income in 1960. The gross receipts per farm in 1959 were \$5,299 or slightly below the \$5,397 average for the state.¹⁰

CHARACTERISTICS OF PARTICIPANTS AND FARMS

Size of Farms

The average size of farms in the three county sample of 120 farms was 130.9 acres. The farms ranged from 12.0 acres to 640 acres.

The amount of cropland consigned by the 120 farms totaled 7,324 acres or 61.0 cropland acres per farm. The range was from 6.7 to 245 cropland acres.

There were 340 farms enrolled in the program in the three counties in 1960. These farms consigned 21,114 acres of cropland or 62.1 acres per farm. In Ohio, the average amount of cropland consigned was 58.6 acres per farm.

Payments

The total annual payment per farm in Ohio averaged \$1,009.50. This was \$17.23 per acre. For all farms participating in the three counties, the total payment

⁷ United States Bureau of Census, op. cit.

⁸ Smith, M. G., et. al., op. cit.

⁹ United States Bureau of Census, op. cit.

¹⁰ Smith, M. G., et. al., op. cit.

averaged \$957.21 or \$15.41 per acre. Those in the sample received an average of \$988.54 or \$16.20 per acre.

Table 1

Distribution of Farms by Cropland Acres on Participating Farms, and All Farms in Three Selected Ohio Counties, 1960

Cropland Acres	Total	
	Number	Per Cent
0 - 49		
CR	58	48.3
All Farms	1,916	42.9
50 - 99		
CR	42	35.0
All Farms	1,311	29.4
100 - 199		
CR	17	14.2
All Farms	948	21.2
200 and Over		
CR	3	2.5
All Farms	289	6.5
Total		
CR	120	100.0
All Farms	4,464	100.0

Note: CR stands for Conservation Reserve sample.

Source: United States Bureau of the Census, Census of Agriculture, 1959 Ohio Preliminary, United States Department of Commerce, United States Government Printing Office, Washington, D. C., 1960.

The range of maximum annual payment rates established by the Agricultural Stabilization and Conservation Committee for the 120 farms was \$11.20 to \$24.70 per acre. The range of actual annual payment rates per acre was from \$7.50 to \$23.20. There was intense competition among farmers attempting to enroll, especially in Knox County. The competitive bidding was partially responsible for the lower average payment per acre in the three counties and in the sample from the state average payment per acre.

Farms enrolling early in the program generally were of lower productivity.

Sample farms indicated that the potential productive capacity of farms enrolling each succeeding year was higher. In addition, the average acreage per farm enrolled each succeeding year was larger than the year previous.

Age of Farmers

The average age of all farm operators in the United States according to the Census of Agriculture was 49.0 years and in Ohio it was 50.6 years in 1954. The average age of Ohio farmers as reported in the 1959 Census of Agriculture was 50.9 years. The average age of the farm operators in the Conservation Reserve sample was 59.25 years.¹¹

Table 2

Distribution of the Age of Conservation Reserve Participants
in Three Selected Ohio Counties, 1960

Age	Number	Per Cent
Under 25	0	0.0
25 - 34	1	0.8
35 - 44	20	16.7
45 - 54	18	15.0
55 - 64	29	24.2
65 and Over	52	43.3
Total	120	100.0

Source: Original data.

The average age of full-owners and part-owners participating in the Conservation Reserve was 59.05 and 59.00 years respectively. Only four tenants were found in the

¹¹ The 95 per cent confidence limits for the difference was 7.75 to 9.95 years. When the difference in the means of 59.25 years for participants and 50.6 for all farmers was tested, the difference was found to be significant at the .01 level. The 1954 Census of Agriculture data on the age of all farmers was used in making this test. This was necessary because the preliminary 1959 Census of Agriculture did not contain sufficient data for calculation. However, the 1959 Census showed about the same average age of all farmers as did the 1954 Census.

sample of 120 farmers. The average age of the four was 65 years.

Tenure

The 69 owner-operators or 57.5 per cent of the sample had control of 4,972.4 acres or 65.2 per cent of the cropland. These farms averaged 72.1 acres of cropland per farm.

The remaining 42.5 per cent of the farms were operated by tenants or neighboring farmers prior to participation in the program. These 51 farms had 2,655.5 acres or only 34.8 per cent of the total cropland on the farms. The farms operated by neighbors averaged 52.1 acres per farm. The average cropland on farms surveyed was 61.0 acres.

Table 3

Number and Percentage of Farms and Cropland Acres Operated by Renters and Owners Before Participation in the Conservation Reserve in Three Selected Ohio Counties, 1960

Cropland Acres	Rented	Per Cent	Owner-Operated	Per Cent
0 - 49.9				
Number of Farms	28	23.33	30	25.00
Cropland Acres	827.1	10.84	884.4	11.60
50 - 99.9				
Number of Farms	20	16.67	22	18.33
Cropland Acres	1,420.8	18.63	1,558.7	20.43
100 - 199.9				
Number of Farms	2	1.67	15	12.50
Cropland Acres	202.9	2.66	2,083.3	27.31
200 and Over				
Number of Farms	1	0.83	2	1.67
Cropland Acres	204.7	2.68	446.0	5.85
Total				
Number of Farms	51	42.50	69	57.50
Cropland Acres	2,655.5	34.81	4,972.4	65.19

Source: Original data.

Economic Class

Farms are divided in the Census of Agriculture into two broad categories. These two categories are commercial farms and other farms. Commercial farms include all farms selling farm products valued over \$2,500 unless income from other sources exceeds the value of farm products sold. It also includes the farms selling \$50 to \$2,499 when the operator was under 65 years of age and worked less than 100 days off the farm, if gross farm income exceeded non-farm income.

The other farms include part-time, part-retirement, and abnormal farms. When used in the economic class sense, these farms have a special meaning. A part-time farm is one (a) that is operated by a person under 65 years of age and (b) who is working off the farm 100 or more days, or with income from other sources greater than value of farm products sold, and (c) the sales of farm products amount to \$50 to \$2,499. A part-retirement farm is one (a) that is operated by a person 65 years of age or over, and (b) farm product sales amount to \$50 to \$2,499.

The number of part-retirement farms does not equal the number of farmers 65 years of age or over in the study. If farmers 65 years old or over had gross farm product sales of \$2,500 or more, by the economic class criteria, they were counted as commercial farms. The economic class criteria required the sales to be \$50 to \$2,499.

Part-retirement farmers have apparently used the Conservation Reserve as a vehicle to retirement. The returns from the Conservation Reserve coupled with Social Security benefits and other sources of income provide their livelihood.

The total number of part-time farmers in Table 4 does not agree exactly with the total number of part-time farmers used in other tables. Some of the part-time farmers working 100 days or more off the farm fall in the commercial class using the economic class criteria. Their gross farm product sales exceeded income from other sources.

Table 4

Number and Percentage of Farmers by Economic Class Before Participation
in the Conservation Reserve, Three Selected Ohio Counties, 1960

Class of Farm	Three County Total		Conservation Reserve	
	Number	Per Cent	Number	Per Cent
Commercial Sales of:				
\$20,000 or more	196	4.63	3	2.50
10,000 to 19,999	481	11.37	5	4.17
5,000 to 9,999	871	20.58	14	11.67
2,500 to 4,999	863	20.39	10	8.33
50 to 2,499	210	4.96	8	6.66
Other: ^a				
Part-time	1,111	26.25	41	34.17
Part-retirement	500	11.82	39	32.50
	4,232	100.00	120	100.00

^a Other is as follows:

Part-time is one (a) that is operated by a person under 65 years of age, (b) who is working off farm 100 or more days, or with income from other sources greater than value of farm products sold, and (c) the sales of farm products amount to \$50 to \$2,499.

Part-retirement is one (a) that is operated by a person 65 years of age or over, and (b) farm product sales amount to \$50 to \$2,499.

Source: United States Bureau of the Census, Census of Agriculture, 1959 Ohio Preliminary, United States Department of Commerce, United States Government Printing Office, Washington 25, D. C., 1960.

One third of all the farms in the sample fell in the commercial farm classes. These farmers were dependent primarily upon the income from farming for living purposes. Only eight had gross farm sales exceeding \$10,000. If costs of production were deducted, the remaining 32 had relatively low net farm incomes.

Reasons for Participation

The 120 farmers participating in the Conservation Reserve were asked to give

their reasons for placing their land in the program. In most cases, there were a combination of conditions leading to the decision to participate in the Conservation Reserve. The total number of reasons in Table 5 is 342. An average of 2.85 reasons was given by each person interviewed.

Table 5

Reasons Given by Farmers for Participating in the Conservation Reserve Program, Three Selected Ohio Counties, 1960

	Number	Reasons (Per Cent)	Respondents (Per Cent)
Health and Retirement	80	23.39	66.7
Income Related	74	21.64	61.7
Soil Related	68	19.88	56.7
Renter Related	54	15.79	45.0
Labor Related	46	13.45	38.3
Capital Related	9	2.63	7.5
Other	11	3.22	9.2
Total	342	100.00	xxxx

Source: Original data.

Health and retirement reasons were the most commonly mentioned. Two thirds of all participants mentioned this reason for participation. The worry of supervising and securing help to perform the farm operation was mentioned by older people.

The income related response was given by 62 per cent of the people. Many felt the program was an opportunity to improve net farm income. Another income reason given by many respondents was that the program gave an assured income. These people made the point that fluctuations in net farm income would be eliminated. In some years, many noted, the price fluctuations, natural risks of

weather, insects, diseases, or other factors would reduce net farm incomes sufficiently to offset the good years. Many people were interested in shifting the income risk and receiving a guaranteed annual income.

The Conservation Reserve provided the opportunity to return the soil to grass crops and to provide some returns at the same time. Fifty-seven per cent of the people felt their soil had been farmed rather intensively for a number of years. More often than not, the people giving this answer had rented their farms and were older contract holders. Many of these farms had small cropland acreages.

Forty-five per cent gave renter related reasons for participation. There were 26 people indicating they could avoid renting through the Conservation Reserve. Twenty-eight people gave other reasons related to renting their farms to neighboring farm operators. Their answers were "poor renters," "can't get renters," or "farm is too small to rent satisfactorily." Such answers were received in Hocking and Knox counties.

Participants indicated most of the young people have left the area, or they were part-time farmers employed in nearby towns and were not interested in renting land.

Off-farm employment was the major labor related reason given by people participating in the program. Forty people gave this reason. Participation was encouraged on six farms because they couldn't hire labor. The implication was that labor was unavailable at the wage the operators would pay.

Capital related responses were not numerous. Other responses included: help the government, land was isolated, too far to move machinery, change the type of farming, control noxious weeds and wildlife protection.

Overall, the participants in the Conservation Reserve were older than the general farm population; farms consigned were significantly smaller in total acres, farmer-owner operated farms were larger than the average for all farms participating

and the rented farms were smaller. There was a high proportion of part-retirement and part-time farmers participating in the program.

ADJUSTMENT OF THE HUMAN RESOURCE

It is important to consider people in dealing with agricultural resource adjustment. The human resource is an important factor of production. Total resources -- land, labor, management, and capital -- devoted to farming produce such a high level of output that incomes of farm people are below those of non-farm people. In 1959, there were 21,890,000 people living on farms in the United States. The average net income per capita of farm people was less than one half the income of non-farm people.¹²

Much of the excess production in agriculture occurs because there are too many resources devoted to agriculture. Some resources devoted to agriculture are seriously underemployed. However, changes in the uses of resources in agriculture have been occurring at a relatively rapid rate.

If agricultural adjustment is necessary to improve the income of farm people, the human resource is strategic because people do the adjusting.¹³ People decide to move or not to move; to take non-farm employment or not to work off the farm; to change from a certain type of farming to another; to apply new technology or to farm as before; to purchase or rent additional land or to remain on the same size unit; to improve their managerial skills through additional training or not; and what to do with regard to their children. It is the low returns for the human resource which is of primary concern in agricultural policy.

¹² Agricultural Marketing Service, The Farm Income Situation, United States Department of Agriculture, April 25, 1960, p. 32.

¹³ E. J. Neiderfrank, People and Agricultural Resource Adjustments, A.E.P.-86, Federal Extension Service, United States Department of Agriculture, Washington, D. C., 1958, p.1.

The Conservation Reserve program was intended to help farmers adjust total crop acreage in the United States. An important effect of the program, possibly not intended at the time of legislation, has been to increase the mobility of the agricultural labor force. One means of improving the condition of low income farm families is for many to shift away from farming.

Returns in off-farm employment are higher than returns to labor in farming. Further, the reduction in the total labor force in farming which results from off-farm migration tends to increase the returns to farm labor as this resource becomes more scarce.

Farming Status Prior to the Program

Part-time farmers were the most numerous contract holders. Part-time farmer, as used here, refers to one working 100 days or more off the farm. Forty-eight per cent of all those interviewed worked 100 days or more off the farm before signing a contract.

The next largest group of participants were full-time farmers before the Conservation Reserve. Full-time farmers made up 30 per cent of the participants.

Women not working off the farm and retired people made up the remaining 22 per cent. Fifteen per cent of this group were older widows.

Change in Farming Status

There were 36 full-time farmers before the Conservation Reserve. Ten people in 1960 were full-time farmers (Table 6). The net shift from full-time farming as a major means of earning a livelihood was 26 operators. Three people became full-time farmers after the beginning of the program. One entered from the part-time farmer class while two came from non-farm occupations. Only seven of the 36 original full-time farmers continued as full-time farm operators.

Before the Conservation Reserve contract 58 were part-time farmers, and

there were 58 part-time farmers in 1960. The four full-time farmers that moved to part-time farming after signing the contract were off-set by three part-time

Table 6

Change in Farming Status of Conservation Reserve Participants
from the Year Before the Contract to 1960,
Three Selected Counties, Ohio, 1960

Before Conservation Reserve	1960				Total, Before CR
	Full-Time Farmer	Part-Time Farmer	Retired	Other	
Full-Time Farmer	7	4	25	0	36
Part-Time Farmer	1	54	3	0	58
Retired	0	0	6	0	6
Other	2 ^a	0	0	18 ^b	20
Total, 1960	10	58	34	18^b	120

^a Men moving from non-farm occupations.

^b Women not working off farm.

Source: Original data.

farmers retiring and one part-time farmer moving to a full-time farming operation. The number of part-time farmers remained the same and the retiring full-time farmers and women did not increase the non-farm labor force after signing the contract. There was no net addition to the non-farm labor force as a result of the Conservation Reserve program.

The table shows that only four former full-time farmers became part-time farmers since the beginning of the program. It might be expected full-time farmers wanting to get off-farm employment would use the Conservation Reserve program to make the change. However, among the participants interviewed, the program apparently was not an important vehicle to off-farm employment.

Most farm people in their decision-making process considering off-farm

employment would probably first secure a non-farm job. If the off-farm job were satisfactory in regard to the values of the individual, the former full-time farmer would become established as a part-time farmer. He might continue to live on the farm or rent to a neighbor. The Conservation Reserve was an added alternative after the non-farm work was found to be acceptable.

Signing a Conservation Reserve contract and then attempting to secure off-farm work would reduce the alternatives on the farm. The contract would be firm and if non-farm employment was not available, the operator's labor would be underemployed.

Securing off-farm work and then signing a Conservation Reserve contract is probably a means of moving out of active farming. The necessity of farming the land after off-farm work hours, low returns in farming, plus other factors may have encouraged the consignment of land to the Conservation Reserve. By the end of the three to ten year Conservation Reserve contract, the lack of livestock, obsolescence of machinery and the costs of becoming re-established in farming probably means these part-time farmers have permanently shifted their labor from agriculture.

Length of Off-Farm Employment

The average number of years participants had worked 100 days or more off the farm was 13.9 years. It was found in another Ohio study based on 1954 data, that part-time farmers had worked an average of 11 years off the farm.¹⁴

¹⁴ W. A. Wayt, H. R. Moore, C. H. Hillman, Some Economic and Social Aspects of Part-Time Farming, Research Bulletin 837, Ohio Agricultural Experiment Station, Wooster, Ohio, 1959, p. 13.

Table 7

Number and Percentage of Conservation Reserve Participants Working
100 Days or More Off the Farm by Years of Off-Farm Employment,
Three Selected Ohio Counties, 1960

Years	Number	Per Cent
0 - 4.9	13	22.41
5.0 - 9.9	7	12.07
10.0 - 14.9	18	31.03
15.0 - 19.9	9	15.52
20.0 - 24.9	3	5.17
25.0 - 29.9	2	3.45
30.0 - 34.9	2	3.45
35.0 - 39.9	4	6.90
Total	58	100.00

Source: Original data.

Thirteen people or 22 per cent had worked off the farm less than five years (Table 7). This included the period during which the Conservation Reserve was in effect. The remaining 45 participants started their off-farm employment before the Soil Bank or Conservation Reserve program was enacted. Eleven people had worked off the farm 20 or more years.

Some part-time farmers live very close to their non-farm employment and drive only a few miles from the farm. Most drive over five miles one way to their employment. The longest distance found in this study was 39 miles. Some participants have indefinite travel distances. Some people included in the study with off-farm work, covered territories ranging from part of a county to a district of eight counties. The contract holders drove an average distance of 9.2 miles one way to work.

The part-time farmers in 1960 holding contracts were classified according to the amount of training and skill required in the job they were holding both before participation and in 1960. There was very little aggregate change in jobs. There was a decline of only one professionally trained person working in 1960 compared with before the contract. An increase of one skilled worker occurred. Within each off-farm classification, there were very few that had changed from one job to another from the year before contracting to 1960. Apparently the people interviewed had relatively high job stability.

Of the 58 part-time farmers included, 55 said they considered off-farm employment permanent, assuming there were opportunities to continue off-farm work.

Former full-time farmers using the Conservation Reserve as a vehicle to retirement accounted for 25 out of 120 or 21 per cent of the total participants in the study. This is the largest and most significant shift in farming status in the interval from the year prior to participation to 1960.

A combined total of 80 participants or 66.7 per cent were using the Conservation Reserve as a means for adjustment of the human resource out of agriculture. The side effects of the Conservation Reserve in encouraging or helping people make the shift to retirement or to full-time, non-farm employment, may be the most significant aspect of the program.

Eligibility for Social Security payments was another factor encouraging retirement. Receipt of Social Security payments was frequent among Conservation Reserve participants interviewed.

Farmers placing land in the program and getting Soil Bank payments before retirement report those payments as earned income for Social Security purposes.¹⁵

¹⁵ Internal Revenue Service, Farm Rental Income -- Soil Bank Payments, IRS Publication 363, Social Security Administration and United States Treasury Department, United States Department of Health, Education and Welfare, Washington, D.C., 1957.

They get Social Security credit for their earned income. Farmers placing land in the Conservation Reserve and retiring also must report the program payments as earned income under certain circumstances.

These payments may apply against the amount of earnings (\$1,200 per year) that a person can receive and get full Social Security benefits. However, whether or not a retired farmer's Social Security benefit payments are affected by the payments he gets under the Conservation Reserve program depends upon the "substantial services" rendered. This refers to the work and decisions involved in a period of time and is judged on individual cases.

A farmer participating in the Conservation Reserve and personally planting a cover crop on his land would probably be rendering "substantial services" during one or more months in the year. He probably would not get his Social Security payment for the month or months in which the cover crop was planted. Mowing and maintenance work required might or might not be considered "substantial services." The uncertainty of how the Conservation Reserve payments affect the Social Security benefits has undoubtedly reduced interest of some older and larger farm operators.

To the extent this conflict in programs has reduced participation of the larger farms of older operators, it has kept these farms under operation by the owner or made these farms available for tenants. The conflict of the two programs probably is retarding some of the human and land resource adjustment that would otherwise be made. If this conflict were reconciled, both programs might contribute more to resource adjustment. Some participants have hired the establishment of grass cover and mowing and solved the conflict. However, many farmers are not willing to accept the risk and uncertainty in the interpretations.

PERMANENT LAND USE ADJUSTMENT OF CROPLAND

One of the objectives of the Soil Bank Act was to protect the national soil, water, forest, and wildlife resources from waste and depletion. To fulfill the

conservation requirements, the cropland must have grass, trees, or water practices established. The conserving practice was at the option of the producer.

To help farmers make these adjustments, those signing contracts for 5 to 10 years were eligible for cost-share payments. If satisfactory cover was established, the contract could be for three years. The minimum length of contract on the portion devoted to trees with cost sharing was ten years. To meet the cost-share requirements for grass cover, farmers could choose between various seeding mixtures and fertilizer analysis. All practices had to meet certain minimum improved practice standards.

As a result of the above requirements for participation, some permanent land use adjustments have been made. The cropland established to trees and water cover will not be returned to production when the contract terminates on the farm. The Conservation Reserve provided the opportunity for some to adjust to a permanent grassland type of agriculture. A few farmers interviewed indicated the desire to make permanent land use adjustments as a major reason for participation.

Grass cover has been established on 500,575 acres out of 524,785 total acres in the program in Ohio during 1960 (Table 8). The 21,225 acres of wildlife cover includes grass and marsh cover. Wildlife marshes were established on 51 acres. The remaining 21,174 acres are in wildlife grass cover. When the grass practice and the wildlife grass acres are combined, it makes up 99.42 per cent of all Conservation Reserve land. The remaining 3,036 acres or 0.58 per cent of the land has cover that is permanently adjusted out of agricultural production.

The relatively permanent land use adjustment of cropland for other farm uses is an insignificant part of the total. If this is the only permanent adjustment, the Conservation Reserve in Ohio would have been relatively ineffective in permanently adjusting cropland to non-crop farm uses. When land is abandoned from farming purposes, the natural reproduction of forest trees begins to occur along

Table 8

Use of Land in the Conservation Reserve Program and
Permanent Land Use Adjustment in Ohio, 1956-1960

<u>Land Use on Conservation Reserve</u>	<u>1956-60</u> (Acres)	<u>1960</u> (Acres)	<u>1956-59</u> (Acres)
<u>All CR Land</u>			
Grass	500,575	180,301	320,274
Wildlife	21,225	9,445	11,780
Trees	2,468	457	2,011
Ponds	517	67	450
Total	524,785	190,270	334,515
<u>Permanent Adjustment</u>			
Grass	0	0	0
Wildlife Marsh	51	2	49
Trees	2,468	457	2,011
Ponds	517	67	450
Total	3,036	526	2,510
Net Available Cropland in CR, 1960	521,749	189,744	332,005

Source: Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio.

the wooded edges of the fields and eventually they revert to their natural state of forest cover. Some of the land consigned to the Conservation Reserve otherwise might have been abandoned.

The use of a grass cover practice and regular maintenance slows down the reforestation process on some land. Mowing the grass cover annually will destroy the new tree seedlings each year. To the extent this is happening, the Conservation Reserve retains some cropland for possible future crop production and is probably slowing down the adjustment to forest cover. While this may be a disadvantage when overproduction is a problem, the ease with which this land can be brought back in case of need is an absolute advantage.

However, the objective was to protect the national soil, water, forest and wildlife resources from waste and depletion. A major reason given by 68 people for participation was soil related. These farmers indicated the soil would benefit with grass being grown for a period of time. Farmers felt the land had been subjected to more severe cropping than desirable.

Comparison of the percentage of various land capability class groupings on the Conservation Reserve farms with the total percentage of land in three counties, revealed significantly less Class I and II land on the farms participating in the program (Table 9). There was significantly more Class III and IV and Class VI and VII land. Classes III, IV, VI, and VII have increasing degrees of slope. Erosion becomes more of a hazard as the land capability class number increases, excepting Class V. The placing of the land in the Conservation Reserve should reduce erosion. In addition, the grass cover can provide additional organic matter, improve soil tilth, and reduce leaching of plant nutrients.

Most of the land planted to trees and ponds on the farms surveyed was in Class III and IV. The small acreage permanently adjusted out of agriculture appears to be coming from the more marginal cropland. This is as it should be if permanent adjustment is the goal.

Table 9

Acres of Land on Farms by Use and by Land Capability Classes
on Conservation Reserve Farms in Three Counties, 1960

Land Capability Class	Three Counties		CR	
	Total	Per Cent	Total	Per Cent
	Total		Total	
Class I and II	422,413	50.23	5,061.7	32.22 ^a
Class III and IV	301,773	35.88	6,688.5	42.58 ^a
Class V	187	0.02	6.0	0.04
Class VI and VII	116,662	13.87	3,951.8	25.16 ^a
Total	841,035	100.00	15,708.0	100.00

Note: Description of land capability classes found in Appendix Exhibit I.

^a The difference between county totals and Conservation Reserve totals are significant at the .01 level.

Source: Unpublished preliminary data of the Ohio Committee for the National Inventory of Soil and Water Conservation Needs.

If more permanent adjustment of land out of cultivation is the objective, there is need for more emphasis on extensive planting of trees on the Conservation Reserve cropland. Trees are emphasized because larger acreages can be utilized in this manner, while only small total acreages are adaptable to ponds. In terms of total effectiveness, trees with associated wildlife and recreation seem to offer the most promise for permanent land adjustment.

Higher annual payment rates per acre than were paid for the rest of the farm could have been made on plantings to trees on land where this is desirable. Contracts for varying periods rather than a ten-year period might make it more attractive. In addition, cost-share payments for planting trees might be made at a higher level than for other practices. The encouragement of tree planting by the Agricultural Stabilization and Conservation Committee and other agencies could also bring about more reforestation. One or more or a combination of the

above would probably encourage more reforestation.

EFFECTIVENESS IN REDUCING PRODUCTION

One of the major objectives of the Soil Bank Act when enacted in 1956 was to protect interstate and foreign commerce from the burdens and obstructions which result from the utilization of farm land for the production of excessive supplies of agricultural commodities.

The excessive supplies of a few commodities have been a burden to farmers in the effects these large supplies have on the price of the commodity and on the net income of farm people. To alleviate this situation and to bolster income, storage programs under the Commodity Credit Corporation through July 31, 1960, accumulated \$8.7 billion of farm commodities.¹⁶ The accumulation and storage of these commodities have been a burden to the taxpayer. The Soil Bank Act was intended to prevent the production of excess farm commodities, to relieve the farmer of the price-depressing effects of large supplies, to relieve government of the storage problem, and to reduce government costs.

In this section, an attempt will be made to determine the effectiveness of the Conservation Reserve in removing the land resource from the production of crops. In Ohio, 91.1 per cent of the contracts and 95.0 per cent of the land enrolled were in "whole" farms. Thus, the entire cropland on most participating farms was being withheld from production.

In Ohio, there are 25 farm crop commodities of sufficient importance to be included in reports on crops produced.¹⁷ Eight of the 25 are grain crops, six are hay or grass and legume seed crops. Included in the remaining 11 are tobacco, sugar beets, commercial vegetables, and various fruit crops.

¹⁶ United States Department of Agriculture, Report on Status of Commodity Credit Corporation Price Support Program as of July 31, 1960, 2836-60, Washington, D. C., September 28, 1960.

¹⁷ M. G. Smith, G. A. Tejada, R. P. Handy, and E. E. Houghton, Ohio Agricultural Statistics, 1957-58, Research Bulletin 844, Ohio Agricultural Experiment Station, Wooster, Ohio, 1959, p. 6.

Fruit crop acreages are excluded from participation in the Conservation Reserve by the special definition of cropland. Commercial vegetables are a more intensive farm land use than grain crops. This acreage is eligible, but it is unlikely to be consigned to a program because the returns per acre would be much lower in the program than if planted to vegetables. Tobacco and sugar beet acreage require considerably more labor per acre, and the gross and net returns per acre are likely to be much higher than for grain crops. There is little likelihood of very much of this acreage being consigned.

Effects on Crop Production

The acreage of crops planted, yields per acre, and the acreage in the Acreage Reserve the year before the contract for each farm in the sample were secured from the files of the Agricultural Stabilization and Conservation Committee in each county.

An estimate of the production that would have occurred in 1960 on the Conservation Reserve land can be determined from the average yield and acreage. These estimates, when added to the production that actually occurred in 1960, give the estimated total production if no program existed.

Acreage of Crops Grown

The five major crops produced on the participants' farms and the percentage each crop was of the total cropland are shown in Table 10. Corn and corn land in the Acreage Reserve accounted for 25 per cent of the cropland the year prior to participation in the Conservation Reserve program.

The average percentage of acres planted to soybeans, wheat, and oats on the participating farms the year prior to signing contracts was slightly less than the average percentage planted to these crops on all farms in these three counties and Ohio. The average percentage of acres planted to hay and other crops (cropland pasture, idle cropland, timothy seed, popcorn, and other minor crops) was

Table 10

Acres and Percentage of Total Land in Five Selected Crops for Conservation Reserve Farms, All Farms in Three Counties, and in Ohio, 1960

Crop	Ohio ^a		Three County Actual		Conservation Reserve Sample ^b	
	Acres	Percent	Acres	Percent	Acres	Percent
Corn	3,860,415	31.50	146,766	36.01	1,840.2 ^c	25.13
Soybeans	1,456,500	11.88	45,000	11.04	788.8	10.77
Wheat	1,557,995	12.71	51,564	12.65	699.1 ^d	9.13
Oats	1,113,000	9.08	34,450	8.45	514.6	7.03
Hay	2,173,000	17.74	69,700	17.10	1,848.6	25.24
Other ^e	2,094,460	17.09	60,135	14.75	1,662.5 ^f	22.70
Total	12,255,370	100.00	407,615	100.00	7,323.8	100.00

^aAverage of 1958 and 1959.

^bFor year prior to participation.

^cIncludes 612.6 acres in Acreage Reserve.

^dIncludes 226.9 acres in Acreage Reserve.

^eIncludes all other crops, cropland pastured, and cropland not harvested and not pastured.

^fCrops and acreage as follows: Cropland not harvested and not pastured, 826.5 acres; cropland pasture, 418.9 acres; timothy seed, 224.5 acres; popcorn, 119.6 acres; and 73 acres of four other crops.

Source: United States Bureau of the Census, Census of Agriculture, 1959 Ohio Preliminary, United States Department of Commerce, United States Government Printing Office, Washington 25, D.C., 1960.

higher than the average in the three counties and in the state.

This difference in the percentage of acreage planted to various crops between participants and non-participants was attributed to several factors. One of the most important was that many participants had attempted to get into the program beginning in 1959, but their applications were rejected because of inadequate funds. They felt relatively certain they would have an opportunity in 1960 to participate. Because of off-farm work, plans to retire, health, inadequate machinery, or other factors, they did not plow as many acres for grain crops as non-participants. The grass stands were harvested for hay or a seed crop.

Another important factor in the percentage difference was topography. Participants had a significantly higher percentage of land capability in Class III and IV. This land cannot be safely planted to grain crops as frequently as Class I and II land because of erosion hazards.

Applying the percentages for the acreages of selected crops of the participants to the 524,785 acres in the Conservation Reserve provides an estimate of the acreage for each crop that could have been expected in 1960. Using the 524,785 acres assumes all of this land would be available and that no permanent land use adjustment had occurred. The results are shown in Table 11.

Yields Per Acre for Selected Crops

Average yields for the selected crops on the Conservation Reserve farms were slightly lower the year prior to participation for each crop than the average yields for 1958 and 1959 on all the acreage devoted to these same crops in the three counties and in Ohio. This small difference may be attributed to characteristics of the operators -- part time farmers, older farmers, and tenants with other land -- which would make it difficult to get the work done on time. Loss of interest, poor health, older age, and other factors also may have contributed to the lower yields.

Table 11

Number of Acres Which Would Have Been Available for Production of
Crops Without the Conservation Reserve Program, Ohio, 1960

Crop	Per Cent	Acres Available
Corn	25.13	131,878.5
Soybeans	10.77	56,519.3
Wheat	9.13	47,912.9
Oats	7.03	36,892.4
Hay	25.24	132,455.7
Others	22.70	119,126.2
Total	100.00	524,785.0

Source: Table 10

Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio

The average yields for the selected crops on participating farms ranged from 97.0 to 98.7 per cent of the yields for all farms in the three counties (Table 12). Four out of the five crops had yields about 98.5 per cent of the average yield for the three counties. Another study in Ohio, using productivity indices, found the average productivity of participants' farms to be 98.0 per cent of the average for the county studied.¹⁸

Expected Production of Some Selected Crops

The average yield per acre in Ohio during the 1960 crop year for corn was 68 bushels; soybeans, 25 bushels; wheat, 35 bushels; oats, 63 bushels; and hay, 1.79 tons.¹⁹ The average yield and production from the Conservation Reserve land for each of the selected crops are shown in Table 13.

The land in the Conservation Reserve in Ohio, if it had been in production, would have meant 3.3 per cent more bushels of corn, 3.5 per cent more soybeans,

¹⁸ John F. Vermilya, A Study of the Conservation Reserve Program in Montgomery County, Masters Thesis, The Ohio State University, 1961.

¹⁹ Crop Reporting Board, Crop Production, Agricultural Marketing Service, United States Department of Agriculture, Washington 25, D. C., December, 1960.

Table 12

Yields Per Acre for Five Major Crops on Conservation Reserve Farms the Year Prior to Participation, All Farms in Three Counties, and in Ohio

	<u>Ohio^a</u>	<u>Three County Actual^a</u>	<u>Conservation Reserve Sample</u>		
	Yield Per Acre	Yield Per Acre	Yield Per Acre	Percent of Three County Actual	Percent of Ohio
Corn, bushels	61.6	60.30	59.37 ^b	98.46	96.38
Soybeans, bushels	26.0	27.45	27.09	98.69	104.19
Wheat, bushels	28.2	26.71	25.91 ^b	97.00	91.88
Oats, bushels	48.9	44.53	43.88	98.54	89.73
Hay, tons	1.72	1.54	1.52	98.70	88.37

^aAverage of 1958 and 1959.

^bIncludes indicated yields on land in the Acreage Reserve.

Source: M. G. Smith, B. U. Kienholz, R. P. Handy, and E. E. Houghton, Ohio Agricultural Estimates, 1959, Department of Agricultural Economics, Ohio Agricultural Experiment Station, Wooster, Ohio, 1960.

M. G. Smith, G. A. Tejada, R. P. Handy, and E. E. Houghton, Ohio Agricultural Statistics, 1957-1958, Research Bulletin 844, Ohio Agricultural Experiment Station, Wooster, Ohio, 1959.

Table 13

Actual and Total Possible Production Including the Amount and Percentage of Total Possible Production from the Conservation Reserve for Five Selected Crops in Ohio, 1960

Crop	Actual	Expected Production from CR Land			Actual Production	Percent of Total Possible from CR Acreage
	Production Ohio (000)	Acres	Yield	Production (000)	Plus Expected Production (000)	
Corn	260,984 bu.	131,879	67.0 bu.	8,836 bu.	269,820 bu.	3.27%
Soybeans	38,375 bu.	56,519	24.6 bu.	1,390 bu.	39,765 bu.	3.50%
Wheat	52,500 bu.	47,913	34.5 bu.	1,653 bu.	54,153 bu.	3.05%
Oats	65,835 bu.	36,892	62.1 bu.	2,291 bu.	68,126 bu.	3.36%
Hay	3,653 tons	132,456	1.76 tons	233 tons	3,886 tons	6.00%

Source: Crop Reporting Board, Crop Production, Agricultural Marketing Service, United States Department of Agriculture, Washington 25, D.C., October 11 and November 10, 1960.

3.0 per cent more wheat, 3.4 per cent more oats, and 6.0 per cent more hay.

In Ohio, 4.28 per cent of all the cropland was consigned to the program in 1960. Thus, the amount of reduction in the output of grains was about three fourths of the percentage of the land enrolled.

These estimates are based on the assumption that price relationships between crops would have remained the same, yields were 98.5 per cent of normal, and the proportion of acreage growing the selected crops in Ohio was the same as in the sample.

If the program had not been in effect, farm prices would have been substantially lower unless all the extra production went into government storage. Most likely, in the absence of the program, a considerable amount would have gone into government storage, but the remainder would have been placed on the market, reducing farm prices below levels which prevailed.

Effects on Livestock Production

With cropland taken out of production, livestock numbers and production on participating farms would be expected to decline because of less home grown grain, hay, and pasture. Requirements for participation prohibit grazing or harvesting of the cropland. Any livestock kept would need to be maintained in the building area and on permanent pasture or on non-consigned acreage.

There were 55 farms with one or more livestock enterprises prior to participation. Most of these farms had only one livestock enterprise. Eighteen, or 33 per cent of the livestock enterprises were discontinued between the period before participation and in 1960 (Table 14).

Milk production on the farms participating was reduced nearly 77 per cent. Younger participants sold a higher percentage of their cows than older participants. Off-farm work, labor and time schedules for milking cows that conflicted, generally were responsible for the change.

Table 14

Change in Number and Percentage of Livestock Kept and Products Sold
for Six Livestock Enterprises on Farms Participating in the
Conservation Reserve Before Participation and 1960,
Three Selected Ohio Counties, 1960

Enterprise	Volume in Year		Percentage Change Total
	Prior to CR Total	Volume Change Total	
Dairy			
Farms, number	13	- 6	-46.2
Cows, number	164	- 96	-58.5
Milk sold, pounds	790,744	-608,198	-76.9
Beef Cow			
Farms, number	17	- 1	- 5.9
Cows, number	279	- 12	- 4.3
Calves, number	244	+ 22	+ 9.0
Steers, Feeding			
Farms, number	5	0	0
Steers, number	264	- 139	-52.7
Cattle sold, pounds	258,518	-145,468	-56.3
Swine			
Farms, number	12	- 6	-50.0
Sows, number	55	- 41	-74.5
Feeder Pigs sold, number	308	- 251	-81.5
Market Hogs sold, pounds	74,621	- 57,121	-76.5
Sheep			
Farms, number	14	- 4	-28.6
Ewes, number	527	- 310	-58.8
Wool sold, pounds	4,689	- 2,934	-62.6
Lambs sold, pounds	40,277	- 21,659	-53.8
Poultry			
Farms, number	3	- 1	-33.3
Hens, number ^a	2,200	- 1,500	-68.2
Eggs sold, dozen	26,705	- 15,625	-58.5

^aNumber of hens per farm had to exceed 200 to be included.

Source: Original data.

Some decline occurred in the number of beef farms and the number of beef cows kept from the start of participation to 1960. An increase occurred in the number of calves raised. This increase occurred because the calf crop on one farm was very low the year prior to participation. Beef cow herds were predominately in Hocking County where there were large amounts of permanent pasture.

The number of steers fed was reduced nearly 53 per cent and the amount sold in terms of total weight declined 56 per cent.

Production of hogs declined more than any other enterprise. The production of feeder pigs declined 81.5 per cent and of market hogs 77 per cent. These declines reflect the importance of the availability of farm grains. Most of this decline occurred in Hardin County which is located in the Corn Belt.

Farms having sheep and participating in the Conservation Reserve were most frequent in Hardin County with a lesser number in Knox County. The number of ewes and the production of lamb and wool declined relatively more than the number of farms keeping sheep. The average size of flock declined from 37.6 ewes per farm prior to participation to 21.7 in 1960 for those farms with ewes. This decline probably was due to an adjustment in the size of ewe flock to the amount of permanent pasture.

Poultry was of minor importance. One farm with 1,500 hens discontinued the operation.

Large reductions in the number of all types of brood stock except beef cows and livestock marketed occurred on participating farms. Many were retiring, semi-retiring, or moving to off-farm employment. This would probably mean a reduction in livestock numbers. However, the lack of home-grown grain appears to have been particularly important. Additional reductions in the production of livestock commodities are expected as the stored feed on the farm is utilized. The reduction in beef cows, sheep, and to some extent dairy, will not be as large as for hogs, steers, and poultry because the former can utilize the permanent pastures on many

farms participating in the program.

EFFECT WHEN LAND RETURNS TO PRODUCTION

Conservation Reserve contracts will expire over a period of years. The number of contracts expiring and the acreage that seems likely to come back into production will add to the supply of farm commodities.

Participants were asked to indicate the probable use of cropland when the Conservation Reserve contract expires. This estimate assumes no contracts are cancelled because of violations or because of death or sale of the farm.

Permanent cropland adjustments are made when farmers plant trees or establish ponds. Some permanent cropland adjustments are made for housing, wildlife development, state park development or other non-farm uses. These are offset by land brought into crop production. When these changes were accounted for, it was found that 96 per cent of all the cropland consigned to the Conservation Reserve program would be available for cropland use at the expiration of the contract. Table 15 shows the results from projecting these relationships to the total sign up in Ohio.

The acreage returning to production for most years is small. With about 11,500,000 acres of cropland in Ohio in 1964, returning land will bring a crop acreage increase of about 2.1 per cent. In 1965, there will be an additional 1.2 per cent returning to production. Thus, production of crops will be increased by about 2.1 per cent in 1964 and another 1.2 per cent in 1965 from return of land to cropping.

Average yields per acre on participants' farms were about 98 per cent of non-participants' the year prior to consigning the land to the program. The effects of grass cover for a minimum of five consecutive years should improve the soil structure and tilth.

With five consecutive years of grass, many operators of the acreage currently in the program may plant a high percentage of the total cropland to corn

Table 15

Acreage in Expiring Contracts by Years and the Acreage and Percentage of Total Likely to be Available for Crop Production at Expiration of Conservation Reserve Contracts, Ohio, 1960

	Acres Expiring	Cropland Available	
		Acres	Percent
1960	1,521.9	1,461.0	0.29
1961	21,936.0	21,058.6	4.18
1962	6,664.8	6,398.2	1.27
1963	249,797.7	239,805.8	47.60
1964	141,796.8	136,124.9	27.02
1965	1,469.4	1,410.6	0.28
1966	1,259.5	1,209.1	0.24
1967	787.2	755.7	0.15
1968	50,904.1	48,867.9	9.70
1969	48,647.6	46,701.7	9.27
Total	524,785.0	503,793.5	100.00

Note: Contracts expire December 31 of the year indicated and become available for crop production the year following.

Source: Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio.

or soybeans in 1964 and 1965. This would increase the total production of corn and soybeans more than the expected percentage increase in total crop acres.

IMPACT ON SOME SELECTED EXPENDITURES

Farmers use many purchased inputs in the production process. These purchased inputs include such items as tractors, and equipment, machinery repairs, gasoline, electricity, fertilizer and lime, seeds, feed, building and fence supplies, twine, and numerous other items.

Farm supply businesses have been concerned about the effects of the Conservation Reserve program on the demand for their products. In response to the increasing concerns of businessmen about the effects on local business, Congress directed the rules and regulations of the Conservation Reserve include provisions to protect these local businessmen. The regulation provided that when over 25 per cent of the cropland in a county or community for 1959 was under contract, no program would be offered in 1960, and where less than 25 per cent of the cropland was under contract in 1959, the acres approved for new contracts in 1960 plus the existing contracts could not exceed 25 per cent of the cropland, except under certain conditions.

The following analysis was designed to determine some of the effects of the program on some of the major purchased items that farmers use in the production process. The specific items included were gasoline, tractors, and fertilizer.

Impact on Tractor Sales

Tractors are a major cost to producers. Tractor manufacturing is a heavy steel consuming industry that employs large numbers of workers. Changes in effective demand and sales can affect a substantial segment of the economy.

The 1959 Census of Agriculture showed 82.2 per cent of all farmers in Ohio had tractors in 1959. There were 83.4 per cent of all farmers in the three counties with tractors. On the 120 farms, there were 69 farms or 57.5 per cent owning 93 tractors for an average of 1.35 tractors per farm. The number of tractors in the three counties in 1959 averaged 1.75 per farm. For Ohio there

were 1.78 tractors per farm.

The 69 farms owning tractors averaged 79.8 acres of cropland per tractor while the farms with no tractor averaged only 35.6 acres of cropland per farm. Most farms had two-plow tractors. The few one-plow tractors were slightly more than offset by three and four-plow tractors.

The average age of tractors on farms participating in the program was 12.1 years (Table 16).

The number of farms in the sample with tractors declined by only one, from 69 to 68 from the beginning of the Conservation Reserve program to 1960. More than one farmer sold all his tractors, but this was offset by tractor purchases by some to perform the maintenance work required by the contract, particularly by farmers that did not own a tractor prior to the contract. Also, a few sold one tractor and purchased another. Participants still had 93 tractors in 1960.

The 21 participating farmers owning more than one tractor probably did not sell because of the high average age of tractors. Farmers indicated the amount offered by used tractor buyers was not sufficient for them to sell. Some farmers wanted the extra tractor available to do any work they might have on the farm, to do custom work in the community, or in case the contract was cancelled (presumably in case of national emergency or violation of contract). A few said they intended to farm after the contract expired and would need the tractors.

If all farmers owning two tractors and participating in the program had sold the second tractor, there would have been 25 additional tractors from 21 farms released to the used tractor market.

Assuming the same relationship of 25 tractors on 120 farms, there would be 1,866 tractors that could be sold from the 8,959 farms in the program in Ohio.

To further analyze the age of tractors, data on the sales of wheel tractors for farming purposes in the United States from 1936 through 1959 were used (Table 16). The oldest tractor found in the sample was 24 years of age, so the

Table 16

Wheel Tractor Sales for Farming Purposes in the United States and Age of Tractors on Conservation Reserve Farms by Three Year Periods in Three Selected Ohio Counties, 1936-1959

	Sold ^a	United States		All Farms	
		3 Year Average	Percent	Number	Percent
1936	193,947				
1937	237,837	201,407.0	9.249	8	8.602
1938	172,437				
1939	185,558				
1940	249,434	249,474.7	11.457	9	9.677
1941	313,432				
1942	172,123				
1943	94,550	167,375.3	7.687	5	5.376
1944	235,453				
1945	224,985				
1946	243,271	294,013.0	13.502	11	11.828
1947	413,783				
1948	436,984				
1949	445,030	435,470.7	19.999	26	27.957
1950	424,398				
1951	472,821				
1952	360,366	389,862.7	17.905	15	16.130
1953	336,401				
1954	212,832				
1955	286,170	229,915.7	10.561	12	12.903
1956	190,909				
1957	203,701				
1958	215,961	229,970.3	9.640	7	7.527
1959 ^b	210,085				
Total	6,532,468	2,177,489.4	100.000	93	100.000

^aData prior to 1947 represents sales; since 1947 represents shipments, which do not differ significantly.

^bEstimated.

Source: United States Bureau of the Census, Statistical Abstract of the United States, United States Department of Commerce, United States Government Printing Office, Washington 25, D.C., Annually 1937 through 1960.

starting date of 1936 was chosen.

In the United States there were 6,532,468 wheel tractors manufactured and sold for domestic farming use from 1936 through 1959. In 1959, there were 4,750,000 tractors on farms in the United States.²⁰ Some of the tractors currently on farms were probably manufactured before 1936, although this would be a small number. However, if we assume all the tractors on farms to have been manufactured from 1936 through 1959, we find that 72.7 per cent are still accounted for on farms. Only about 27.3 per cent have found their way to the junk heap.

The percentage of the total number of wheel tractors found in each age group for all tractors sold in the United States and for all tractors on participants' farms are remarkably close. The only exception being in the 1948-50 period when the participants' percentage was somewhat higher than the percentage of total sales.

New Tractor Sales

Prior to World War II, farmers started the process of replacing horses by tractors as the source of power. The advent of the row crop tractor in the early 1930's made it possible to completely replace horses with tractors. Tractor sales were increasing until World War II (Table 16). War-time restrictions retarded sales of new tractors.

The number of tractors sold from 1947 through 1952 was at a relatively high rate. Some of the large demand for tractors after World War II came about because farmers were adjusting to technological advances in tractors, equipment, farming practices, and replacing war-time worn-out tractors. They also had accumulated funds which normally would have been used to buy tractors during 1942 through 1946.

²⁰ United States Bureau of the Census, Statistical Abstract of the United States, United States Department of Commerce, United States Government Printing Office, Washington 25, D. C., 1960, P. 643.

Tractor sales declined rapidly from 1952 to 1956 excepting 1955. This period appears to be the adjustment period to a lower demand level for tractor manufacturers.

Another factor to consider in tractor sales is that tractors have been increasing in size. As the number of farms declined and the average acreage operated increased, farmers tended to retain the older tractor and to purchase a new, large capacity tractor. Purchasing larger capacity tractors decreases the number of tractors sold.

What effect did the Soil Bank have on tractor sales? The Soil Bank program was initiated in 1956.

Wheel tractor sales for farming purposes in the United States were 190,909 in 1956 and increased in 1957 and again in 1958 to 215,961 tractors. Tractor sales declined 5,876 tractors in 1959 from the 1958 level. Thus, tractor sales have increased in all but one of the years the Soil Bank program was in effect. In fact, during the period, the downward trend was reversed.

As pointed out earlier, Ohio farmers surveyed in the Conservation Reserve generally have not sold their tractors. If their tractors were to be placed on the used tractor market, they would be competing against new tractor sales. Tractor dealers in Ohio are fortunate this competition has not arisen. However, the results of the sample indicate some participants did buy some new and used tractors. Percentagewise, new tractor sales to participants from 1957 through 1959 were somewhat below sales in the United States.

Impact on Tractor Fuel Expenditures

The removal of 524,785 cropland acres from production in Ohio by the Conservation Reserve would affect the sale of tractor fuel. The first step in estimating the effect on tractor fuel sales was to determine the normal fuel expenditures on the acreage consigned to the program assuming there were no program.

The next step was to estimate the fuel costs with the program. Under the program, provisions required both the establishment and maintenance of the cover. The difference between the fuel costs without the program and what it was with the program will be the total net effect of the Conservation Reserve on the total sales of tractor fuel in Ohio.

Expected Tractor Fuel Sales Without the Program

Tractor fuel costs per acre will vary from farm to farm, depending upon the type of farming, the amount and capacity of equipment, kind of tractor, type of fuel used, soil conditions, and possibly other factors. The average cost of tractor fuel was estimated to be \$1.75 per cropland acre.²¹

Assuming a cost of \$1.75 per cropland acre, the total tractor fuel sales on the 524,785 acres consigned to the program in 1960 would amount to \$918,373.75 in Ohio (Table 17). The amount of work to be done on the land not enrolled in the Conservation Reserve on farms is not included in this calculation. It is assumed this land would receive approximately the same care and have the same costs with participation as without.

Tractor Fuel Costs for Maintenance

The Conservation Reserve has grass, trees, or water conservation practices applied to the entire 524,785 acres. A total of 3,036 acres have wildlife marshes, trees, and ponds established as the conservation practice. This acreage is assumed to be permanently adjusted out of agricultural production. There will be little tractor fuel purchased for use on this land in the future.

Under the program, the remaining 521,749 acres were established in a grass

²¹ Department of Agricultural Engineering, The Ohio State University, Unpublished data which indicates gasoline consumption in Ohio will average 6-8 gallons per cropland acre for operations necessary to produce a crop. It is assumed the gasoline cost to farmers is 25 cents per gallon. This does not include the state tax of 7 cents per gallon.

Table 17

Summary of Tractor Fuel Costs Without the Conservation Reserve Program,
the Cost of Maintenance and Establishment of Cover Under the
Program, and Decline in Cost for Ohio, 1960

FUEL COSTS WITHOUT PROGRAM:

Acres in Conservation Reserve	524,785.00
Average Fuel Cost per Acre, Dollars	<u>1.75</u>
Expected Total Fuel Costs, Dollars	918,373.75

1960 COSTS:

Maintenance

Net Cropland to be Mowed, Acres (3036 acres have Trees, Ponds, and Marsh)	521,749
Average Fuel Costs per Acre, Cents	<u>33.7</u>
Total Maintenance Cost, Dollars	175,819.41

Establishment of Cover

A.S.C. Cost-Share, Acres	56,272
Non A.S.C. Cost-Share, Acres	<u>22,700</u>
Total Cover Established, Acres	78,972
Fuel Costs per Acre, Cents	41.8
Total Establishment Cost, Dollars	<u>33,010.30</u>
1960 Total Fuel Cost, Dollars	<u>208,839.71</u>
Net Decline, Dollars	709,434.04

Source: Ohio Agricultural Stabilization and Conservation Committee,
Old Post Office Building, South Third and East State Streets, Columbus 15,
Ohio.

Department of Agricultural Engineering, The Ohio State
University, Columbus 10, Ohio. (Estimates obtained by phone)

cover. This grass cover usually is mowed at least once each summer. Many participants interviewed indicated they were mowing the land more than once. It is estimated that about one half the acreage in the program received two mowings each year for an average of one and one-half mowings per year for all the land.

Almost all of the fuel used in tractors for mowing would be gasoline. Farm cost data suggest fuel costs of 22.5 cents to mow each acre one time.²² For one and one-half mowings, the average tractor fuel cost of mowing per acre per year would be 33.7 cents. The total fuel cost on the net cropland for maintenance purposes would be an estimated \$175,829.46 per year (Table 17).

Tractor Fuel Costs for Establishment of Cover

In 1960, there were 190,270 cropland acres placed in the Conservation Reserve. In Ohio, 56,272 acres were consigned in 1960 to the Conservation Reserve on which farmers requested and received assistance in establishing cover.²³ On another 22,700 acres, farmers paid the entire cost themselves.²⁴ Thus, at least 78,972 acres or 41.7 per cent of the total 1960 acreage required the establishment of cover on which tractor fuel was necessary. The other 110,365 acres presumably had a satisfactory cover growing.

Assuming fuel costs to establish cover were 41.8 cents per acre, the total

²² Department of Agricultural Engineering, The Ohio State University, supplied estimates for fuel cost for maintenance of cover. Assuming a two-14" plow tractor can mow two acres per hour and will consume 8 gallons per hour, then 0.9 gallons of gasoline per acre will be used. At a farm cost of 25 cents per gallon, the total cost per acre equals 22.5 cents.

²³ Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio

²⁴ Ibid.

fuel cost of establishing cover would be \$33,010.30 in 1960.²⁵

Adding the fuel costs for establishment of cover in 1960 and for maintenance of the acres needing mowing in 1960, the total amount spent should be \$208,839.71.

Net Effect on Tractor Fuel Sales

The estimated maximum reduction in tractor fuel sales in Ohio for 1960 on the net cropland in the program would be \$709,434.04. There are undoubtedly some cases where satisfactory cover was not attained and reworking and reseeding were necessary. In addition, there may have been some acres requiring seeding that were not reported in the 1960 program year. Also, the maintenance costs may be increased by additional mowings above the average of one and one-half mowings per year assumed. These situations would increase the sales.

There were 12,255,370 acres of cropland in Ohio in 1959.²⁶ Assuming the same acreage in 1960, no Conservation Reserve program, and tractor fuel costs at \$1.75 per cropland acre, the total tractor fuel sales for use on cropland amounted to \$21,446,897.50 in Ohio. The presence of the Conservation Reserve reduced total sales a maximum of \$709,434.04 or 3.3 per cent of the total. This reduction was somewhat less than the 4.28 per cent of the cropland taken out of production by farmers.

The reduction of sales incurred by tractor fuel manufacturers and dealers for cropland in the Conservation Reserve program is also a reduction in costs of operation for farmers. This reduction in total fuel costs of farmers would be

²⁵ Department of Agricultural Engineering, The Ohio State University. Assuming a two-14" plow tractor pulling a 7-foot disc can disc 2.5 acres per hour and that 2.5 gallons of gasoline is consumed per hour, then 1 gallon of fuel will be used to disc one acre of land. Assuming the same tractor pulling a 7-foot grain drill can plant 2.25 acres per hour and uses 1.5 gallons of gasoline per hour, then 0.67 gallons of tractor fuel will be used. Assuming a total 25-cent cost per gallon at the farm, the cost per acre equals 41.8 cents.

²⁶ United States Bureau of the Census, Census of Agriculture, 1959 Ohio Preliminary, United States Department of Commerce, United States Government Printing Office, Washington 25, D. C., 1960.

the same as the total reduction in tractor fuel sales by the fuel truck operators in each area.

Farmers participating have reduced their tractor fuel cost per cropland acre substantially. They have not eliminated the need for gasoline entirely on the Conservation Reserve cropland acres. Tractor fuel sales in an acre are reduced percentagewise somewhat less than the per cent of cropland consigned to the program in the area. If farmers' auto use increases, there may be little net effect on fuel sales and net income of these dealers. The total reduction in tractor fuel sales by local truck dealers was relatively small when dispersed throughout the number found in the county.

Impact on Fertilizer Sales

Fertilizer is a capital input used extensively by farmers. There are numerous fertilizer plants in Ohio and many local dealers selling fertilizer in communities. Dealerships are held by diverse groups furnishing fertilizer to farmers in communities.

There were 524,785 acres or 4.28 per cent of all cropland consigned to the Conservation Reserve program in 1960. Much of this land would otherwise have been farmed in crops such as corn, soybeans, wheat, oats, and other tilled crops. These crops are normally fertilized by most farm operators.

Potential Fertilizer Sales

The total reported use of fertilizer in the 1959 Census of Agriculture in Ohio for 1959 was 917,537 tons. The average application of fertilizer on corn was 298 pounds; soybeans, 181 pounds; wheat, 284 pounds; hay and cropland pasture, 307 pounds; and all other crops and idle cropland had an average application of 304 pounds per acre.

Assuming for the total acreage in the Conservation Reserve program in Ohio that the proportionate acreage devoted to various crops on the farms surveyed

was representative, the harvested acreage for each cropland use on the Conservation Reserve land would have been fertilized in the same proportion as in Ohio, and the amount of fertilizer applied to these acres prior to consignment was at the same average rate as Ohio, and the same relationship between acreages and fertilizer rates held for 1960 as in 1959, then the reduction in 1960 fertilizer usage was estimated at 36,695 tons (Table 18).

Table 18

Estimated Acreage Harvested and Fertilized with an
Estimate of the Total Fertilizer Application
for Five Cropland Uses on Conservation
Reserve Land in Ohio, 1960

Cropland Use	Estimated Harvested	Estimated Fertilized	Estimated Amount of Fertilizer
Corn	131,535	125,498	18,699.2
Soybeans	56,381	11,789	1,066.9
Wheat	47,795	49,645	7,049.6
Hay and Cropland Pasture	162,081	12,837	1,970.5
All Other Crops and Idle Cropland	125,706	52,030	7,908.6
Total	523,498	251,799	36,694.8

Source: Table 11

United States Bureau of the Census, Census of Agriculture, 1959 Ohio Preliminary, United States Department of Commerce, United States Government Printing Office, Washington, D. C., 1960.

Adding the estimated 36,695 ton reduction from the Conservation Reserve to the 917,537 tons actually used gives a total of 954,232 tons that would have been used by all farmers without the program. The reduction of sales from potential sales would be an estimated maximum of 3.84 per cent in 1960.

The maximum percentage reduction from potential sales was less than the amount of land in the program for two main reasons. First is the difference

in the allocation of acreage to various crops. Participants raised less corn and more hay proportionately than all farmers in Ohio. Other acreages of crops raised were nearly the same proportionately.

Secondly, the establishment of grass cover on the Conservation Reserve usually requires the use of fertilizer. When farmers do not request cost-share payment, they may establish the grass cover without using fertilizer. Standards in Ohio for cost-share payments required 80 pounds of nutrients per acre.²⁷ With a 3-12-12 fertilizer analysis, 296 pounds per acre were needed to meet the minimum requirements.

Potential sales were reduced by a maximum of 3.84 per cent, but this does not necessarily mean actual sales declined. Fertilizer usage per acre has trended upward in recent years. This would partially offset the reduced potential demand from a land retirement program.

Fertilizer Sales in Ohio

To determine the effects on fertilizer sales in Ohio, indices of tons of fertilizer sold, fertilizer nutrient tons sold, fertilizer prices per ton, and farm marketings and government payments in Ohio on a 1947-49 base were constructed. Fertilizer prices and Ohio farm marketings and government payments were deflated by the 1947-49 consumer price index.

The use of fertilizer has increased rapidly in the period since 1936 (Chart 1). Fertilizer tonnage sold in Ohio was 337,146 tons in 1936 and increased steadily until 1952, when a peak of 1,117,163 tons were sold. This is an average annual increase of 13.6 per cent. From 1954 through 1959, the fertilizer tonnage sold fluctuated between one million and 1.1 million tons. Slight increases in the total sales of fertilizer have occurred in Ohio since 1956, which was the

²⁷ Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio.

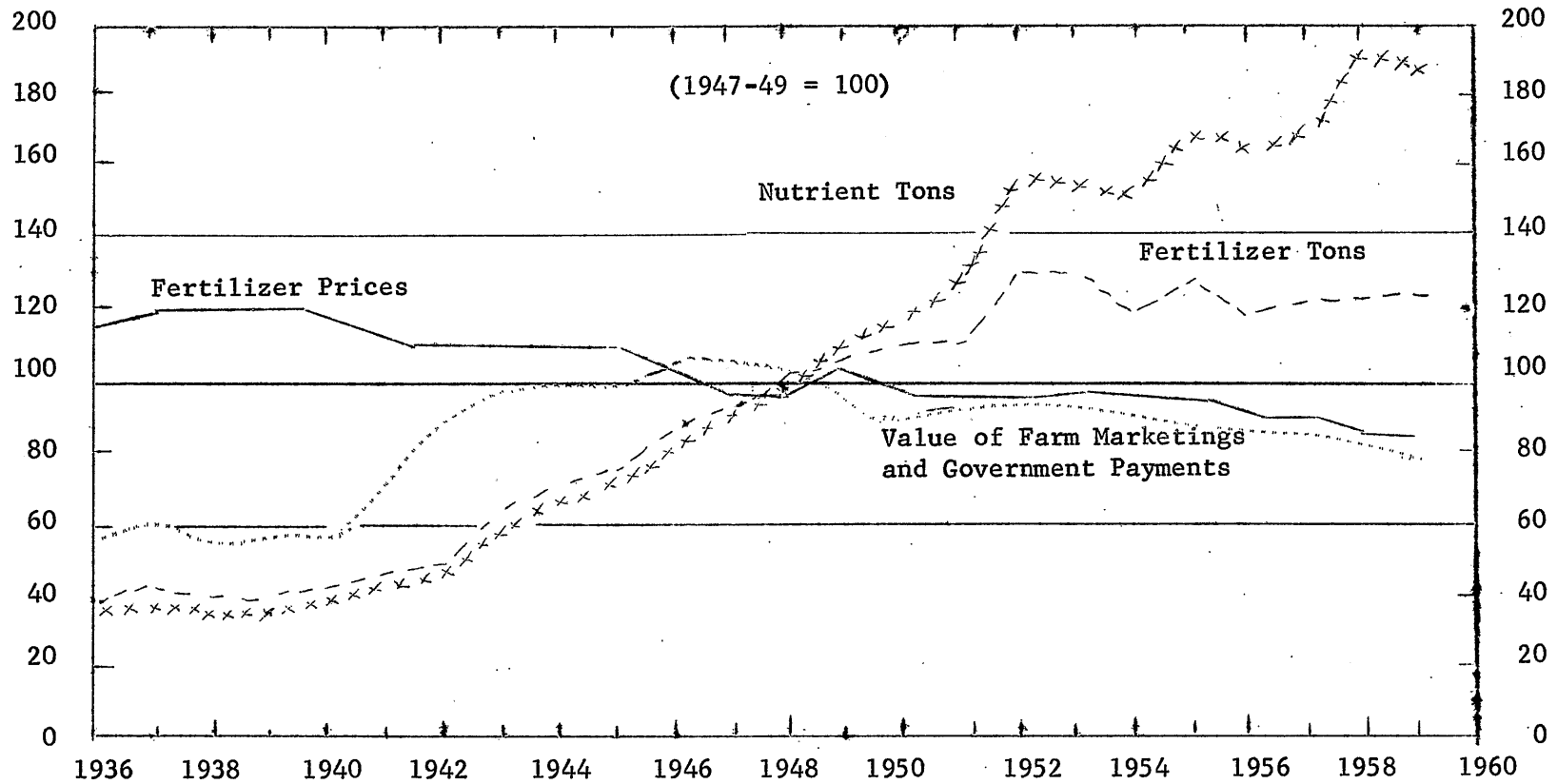


Chart 1. Index of Actual Tons and Nutrient Tons of Fertilizer Sold, Index of Deflated Value of Farm Marketings and Government Payments in Ohio, and Index of Deflated Fertilizer Price in United States, 1936-1959

Note: Nutrient tons refers to the actual nitrogen, phosphate, and potash in the fertilizer.

Source: Appendix Table 2

first year of the Soil Bank Act. The Conservation Reserve was not a large program until 1959. Sales in terms of tons increased slightly in 1959 over 1958.

In the period prior to 1948, fertilizer prices were relatively high, when changes in the price level are considered. Since 1949, the deflated fertilizer price index has continued below the 1947-49 base of 100 and has trended downward.

The nutrient ton index has continued its upward trend since 1949. The nutrient ton index and the fertilizer ton index both increased in 1957 and 1958 over the previous year. The nutrient ton index decreased in 1959 from the 1958 level, but the fertilizer tons index increased. This may be partially the result of the Conservation Reserve. The mix of the various nutrients contained in the fertilizer demanded by participants to establish the grass on the greatly expanded Conservation Reserve program may have been partially responsible for the decline in the nutrient tons sold. The fertilizer analysis needed to establish cover is different than for the production of row crops. Another factor in the decline in the purchase of nutrient tons may have been the disappointment of non-participating farmers in the net returns from farming in the prior years and the prospects for net farm income in 1959. The possibility exists, however, that the 1959 decline is only temporary. An increase could occur in 1960. Decreases in 1953 and 1956 were followed by increases the next year. This could have been repeated in 1960.

The index of the value of farm marketings and government payments on a 1947-49 base were deflated to eliminate the changes in price levels. The total dollars received by farmers in Ohio has remained near the \$1 billion level in the 1950's, but in terms of real purchasing power, these dollars have declined in value.

Farmers have continued to expand the use of fertilizer nutrients. Increased fertilizer applications increase costs, but the returns from the increased output on individual farms probably have more than offset the increased cost. The

decline in real purchasing power of Ohio farmers' dollars probably is affecting the purchase of inputs other than fertilizer to a greater extent. Gasoline sales probably have not been affected greatly by the real decline in income since a minimum and relatively constant amount is required per acre. Cropland acres in Ohio have remained nearly the same. Some cultural practices have reduced the amount of gasoline used on farms. Minimum tillage practices before seeding, the use of rotary tillers, and spraying with one cultivation of row crops have replaced the former three or four cultivations.

The decline in real purchasing power of Ohio farmers probably is being felt by equipment manufacturers and dealers. Farmers may be postponing the purchase of tractors and equipment. These purchases are postponable since tractors and equipment can be overhauled, repaired, repainted, and kept in operating condition for many years beyond the normal expected life. The repair parts and some of the service would accrue to equipment dealers, but this gain in service probably does not offset declines in new equipment sales.

IMPACTS ON THE LOCAL ECONOMY

The impacts of the Conservation Reserve on the local economy have concerned many people. The concerns led to the 25 per cent limitation in 1960 on the amount of cropland in a community or county that could be enrolled in the program. This was designed to reduce the impact on some local communities.

Estimating changes in the flow of income in a local economy is very complex. A land retirement program, such as the Conservation Reserve, would affect the flow of money. However, it affects more than simply farm sales and purchases. The net change in gross farm income is essentially the change in the flow of income from farming in the community. Changes in income from other sources also affect the total family income and the amount of money spent in a community.

The impacts of the program on local Ohio economies fall into five major

categories. These categories include the effect on the people participating in the program, institutions marketing farm products, non-participating farmers, businesses supplying producer goods to farmers, and the sector of the economy selling consumer goods. The combination of these separate impacts is the total impact of the program on the entire community.

Effects on Income of Participants

To determine the effects of the Conservation Reserve on the income available for family living of participants, the changes in net farm income plus the earnings from all other sources were secured before participation and in 1960. Sixty-two per cent of the participants gave an income related reason for participation in the Conservation Reserve. Some said it would improve their income, others indicated it would help assure a given annual income. Only 116 farms were used in this analysis.

Net Farm Income

Net farm income is that money retained by the operator after farm production expenses are paid. Table 19 shows the net farm income dropped from a total of \$109,704.56 before participation to \$88,064.42 (includes Conservation Reserve payments) in 1960. This was a total decline of \$21,640.14. On a per farm basis, the net farm income for the 116 farms dropped from \$945.73 before the program to \$759.17 per farm in 1960. This was an average decline in net farm income of \$186.56 per farm between the two time periods. Some decline would have occurred on these farms if they were not in the program because of the general decrease in the prices of farm products and the increase in costs that occurred during the period.

Net farm income per farm in 1958 and 1959 in Ohio was \$2,383.00 and \$1,915.00

Table 19

Net Farm Income Prior to Participation in the Conservation Reserve and in 1960 with Differences by Farming Status Prior to the Program on 116 Farms in Three Ohio Counties, 1960

Item	Number	Full-Time		
		Prior to CR (dollars)	1960 (dollars)	Difference (dollars)
Total	36	69,269.08	49,421.68	-19,847.40
Average Per Farm	36	1,924.14	1,372.82	- 551.32
Part-Time				
Total	57	31,685.71	29,067.80	- 2,617.10
Average Per Farm	57	555.89	509.96	- 45.93
Retired				
Total	6	2,170.98	2,854.41	+ 783.43
Average Per Farm	6	361.83	475.74	+ 113.91
Other ^a				
Total	17	6,578.79	6,720.52	+ 141.73
Average Per Farm	17	386.99	395.33	+ 8.34
Total				
Total	116	109,704.56	88,064.41	-21,640.15
Average Per Farm	116	945.73	759.18	- 186.55

^aIncludes those not classified as full-time, part-time, or retired prior to program; primarily widows.

Source: Original data.

respectively.²⁸ The \$945.73 average net income for participants in the year prior to participation is significantly lower than the net farm income per farm in Ohio.²⁹

The average net income per farm showed the largest decrease in the former full-time farmer classification. Most of these people were 65 years of age or over. Many people were eligible for Social Security or other pensions. Health and physical limitations were major reasons given by these people for participation.

The people classified as retired or other (primarily widows) showed increases in net farm income. This group had been renting their land to other farmers. Most of these people were not sharing the Conservation Reserve payment with the tenants. This probably accounts for the increase. Part-time farmers were the most numerous group in the program. The net farm income of part-time farmers showed very little decline.

Income From Other Sources

The other important factor in the amount of money available for family living is the non-farm source of income. Salaries and wages from off-farm work of participants and other family members, payments from Social Security, other pensions, non-farm rental payments, gas and oil wells, and returns on investments are included in other sources of income. These payments are gross returns. Taxes or compulsory withholdings are not deducted. The total other sources includes the previously mentioned items plus the net income from farms other than the farm enrolled in the program and net income from non-farm businesses.

The total receipts of \$467,299.52 from other sources in Table 20 show an

²⁸ Agricultural Marketing Service, State Estimates of Farm Income, 1949-59 Supplement to the July, 1960 issue of the Farm Income Situation, United States Department of Agriculture, Washington 25, D. C., August, 1960, p. 9.

²⁹ The standard difference of the mean was 220.14.

Table 20

Number and Amount of Other Sources of Income and Gross and Net Farm Income Prior to Participation in the Conservation Reserve and Changes through 1960 on 116 Farms, Ohio

Source	Number of Sources	Income Prior To CR (dollars)	Income, 1960 (dollars)	Added Since Beginning		Total	
				Number of Sources	Income, 1960 (dollars)	Number of Sources	Income, 1960 (dollars)
Source of Other Income:							
Wages and Salaries Received by Operator	66	245,557.18	261,975.96	3	3,947.00	69	265,922.96
Other Family	17	41,141.13	42,249.00	- 1 ^a	1,275.00	16	43,524.00
Other Farm (Net Income)	8	14,478.70	16,910.36	2	4,280.00	10	21,190.36
Other Sources ^b	75	111,409.88	113,594.10	12	23,068.10	87	136,662.20
Subtotal: Other Income	166	412,586.89	434,729.42	16	32,570.10	182	467,299.52
Gross and Net Farm Income:							
Farm Sales and Other Government Payments	116	361,138.21					109,827.49
CR Payment	116	---					116,435.46
Total Gross Farm Receipts	116	361,138.21					226,262.95
Farm Expense	116	251,433.65					138,198.53
Subtotal: Net Income From Own Farm Operation	116	109,704.56					88,064.42
Grand Total: Family Income	116	522,291.45					555,363.94

^aTwo other family members left non-farm employment and one entered non-farm employment.

^bIncludes Social Security, various pensions, non-farm rental payments, returns on investments, gas and oil wells, and net income from non-farm businesses.

Source: Original data.

increase of \$54,712.63 from the year prior to participation to 1960. A detailed breakdown of the various other sources of income are shown in this table. The table also shows the gross and net farm income prior to participation and in 1960.

The 166 sources of income showed greater returns in 1960 than in the year prior to signing a Conservation Reserve contract. Wages and salaries increased \$16,418.68. Increases in returns to other family members, other farms, and other sources were small. The sixteen added sources of income amounted to \$32,570.10. When combined, the net increase in other sources of income amounted to \$54,712.63. This is an average increase of \$471.66 per family.

The net increase in total family income was \$33,072.49 or \$285.11 per family. Total other sources of income increased \$471.66 per family, but net farm income decreased \$186.55. The \$285.11 per family is the average net increase each family had at its disposal to spend. The general welfare, in terms of income of participants was improved.

Effects on Marketings of Farm Products

The total value of farm products sold prior to participation was \$316,497.71 and in 1960 it was \$95,750.99 (Table 21). The total value of products sold in 1960 was 30.25 per cent of the total value of products sold the year prior to participation. The average reduction per farm in the value of products sold was \$1,902.97. Because of lower prices, the value of these same products would have been a little less if sold in 1960. The indexes of prices received in 1958 and 1959 were 250 and 240 respectively. The estimate of the index of prices received by farmers in 1960 was 237.³⁰ The total reduction in value of products sold was divided between livestock, livestock products, and crops sold.

³⁰ Crop Reporting Board, Agricultural Prices, Agricultural Marketing Service, United States Department of Agriculture, Washington, D. C., October 15, 1960, p. 64.

Table 21

Farm Receipts, Expenses and Net Farm Income Prior to the
Conservation Reserve and 1960 for 116 Farms, Ohio
(dollars)

Item	Income Prior to CR	Income in 1960	Difference
Farm Receipts			
Farm Product Sales	316,497.71	95,750.99	-220,746.72
Other Government Payments	44,640.50 ^a	14,076.50 ^b	- 30,564.00
CR Payment	---	<u>116,435.46</u>	<u>+116,435.46</u>
Total Receipts	361,138.21	226,262.95	-134,875.26
Farm Expenses	<u>251,433.65</u>	<u>138,198.53</u>	<u>-113,235.12</u>
Net Farm Income	109,704.56	88,064.42	-21,640.14

^aAcresage Reserve payments on 652.7 acres of corn with average annual payment of \$55.00 per acre and 291.4 acres of wheat with average annual payment of \$30.00 per acre.

^bCost-share payments for establishing conservation practices on 34.4 percent of the acres consigned to the program in 1960 at the Ohio average rate of \$13.29 per acre.

Source: Original data.

Assuming the \$1,902.97 reduction in farm product sales per farm participating is a reasonable estimate of the total reduction in the value of farm products marketed for the 8,959 farms consigned to the program in Ohio, the total value reduction would total \$17,048,708 for the state. The total value of farm products marketed and government payments in Ohio have been near the \$1 billion level in recent years.³¹ The value of the farm products held off the market in 1960 by the program amounted to about 1.7 per cent of the gross cash farm income in recent years.

The relatively low reduction in value of farm products sold may be partially the result of the type of farming practiced by participants. Most were of a less intensive type of land use and the gross value marketed per acre would be proportionately less. Also, relatively good prices in 1958 probably would have resulted in higher receipts than the Acreage Reserve payments received by some participants. Advancing age, off-farm work, and other factors may have reduced the efficiency of crop and livestock production and the volume marketed from the participating farms. More importantly, some of the grain products were being fed to livestock and were to be marketed in the year after the survey.

Livestock and livestock product marketing agencies and grain dealers had their volume of business reduced in the aggregate by the program. The effect on individual local business depends upon the proportion of total business done with participants and the percentage of land enrolled in a community. The impact may not have been very noticeable to marketing agencies in most Ohio communities since favorable weather resulted in larger than normal yields and marketings.

Effects on Businesses Supplying Producer Goods

Farm expenses include all the fixed and operating expenditures in the farm

³¹ M. G. Smith, G. A. Tejada, R. P. Handy, and E. E. Houghton, 1959 Ohio Farm Income, A. E. 314, Department of Agricultural Economics and Rural Sociology, The Ohio State University, and the Ohio Agricultural Experiment Station cooperating with Agricultural Estimates Division, Agricultural Marketing Service, United States Department of Agriculture, Columbus, Ohio, October, 1960, p. 6.

production process. These cash costs of participants surveyed were reduced from \$251,433.65 the year before participation in the program to \$138,198.53 in 1960 (Table 21). The total reduction between the periods was \$113,235.12 or \$976.16 per farm. Cash outlays in 1960 were 54.96 per cent of the outlay the year prior to participation.

Cash farm expenses are of two major types -- fixed and operating costs. Fixed costs here include the cash outlay for taxes, insurance and interest payments. Depreciation on machinery, equipment, buildings, and the interest charge for the land investment are excluded. Taxes, insurance and farm real estate interest payments continue from year to year, whether the land is producing farm products or is retired from production. Tax and insurance rates and total payments for these two items have been trending upward. Of course, a reduction in livestock and machinery inventory would tend to lower chattel tax payments. Interest payments on real estate have remained stable since they are contracted rates and do not change from year to year. These cash costs for participating farmers in the aggregate have probably remained nearly the same.

Major operating costs include fuel, oil, machinery repair, machinery hire, electricity, fertilizer, lime, seeds and plants, feed purchases, veterinarian services, building and fence repair, livestock purchases and interest payments. These expenditures fluctuate with the type of operation. Taking land out of production will reduce many of these expenditures.

The major portion of the reduction in purchases comes in the farm producer goods and services sector. Based on the \$976.16 reduction in costs per farm in the sample, then the potential purchases of goods and services by the 8,959 farms in the program in Ohio would be reduced about \$8,745,417.

Total farm expenses in Ohio averaged \$812,800,000 for 1958 and 1959.³² The

³² Agricultural Marketing Service, State Estimates of Farm Income, 1959, Supplement to the July, 1960, issue of The Farm Income Situation, United States Department of Agriculture, Washington 25, D. C., August, 1960, p. 14.

reduction of \$8,745,417 occurring on participating farms in Ohio would be 1.08 per cent of the total farm expenditures. The farm production expenses were not reduced as much as the percentage of land enrolled or the value of sales.

This difference would be caused by two factors. One is the fixed cash costs. They continue independent of how the land is used. The other factor is the expenditures farmers make for fertilizer, seed, gasoline, and other items to establish the conservation practices and to maintain the cover.

Some farms enrolling for the first time in 1960 had these costs and they are included in the total. They are nonrecurring costs for the remaining length of the contract. Some further small reduction in expenditures for producer goods will occur in 1961.

The reduction in operating costs will not, however, reach the percentage level of the total reduction in marketings nor the percentage of land enrolled.

Effects on Non-Participating Farmers

The demand for agricultural products is inelastic. When the supply of agricultural products increases 1 per cent, the price usually drops more than 1 per cent, thereby decreasing gross receipts. When the supply of agricultural products decreases 1 per cent, demand is such that prices increase more than 1 per cent.

If the program had not been in effect, additional grain in the market would have depressed grain prices below the level that prevailed. Lower grain prices probably would have encouraged increased government price support activities and costs. Lower grain prices also would have encouraged additional livestock feeding and eventually would have reduced prices of livestock products.

If the program had not been in effect, there would have been substantially lower farm prices, unless all the extra production had gone into government storage. Most likely, in the absence of the program, a considerable amount would have

gone into government storage, but the remainder would have been placed in the market, reducing farm prices below levels which prevailed.

Since farm products are relatively inelastic, non-participating Ohio farmers had their total receipts increased proportionally more than the \$17 million value of farm products held off the market by the program.

Effects on Consumer Goods Sales

The demand for consumer goods is largely a function of the income available to the family after expenses, taxes, and compulsory deductions are made.

Although data were not collected on personal family expenditures, patterns of consumer behavior following increases in family incomes suggest the effects which the program probably had on consumer goods expenditures. A large portion of the increase in income will likely be used to improve levels of living. This means increased purchases of consumer goods.

The average per family increase was \$285.11. This would benefit the consumer goods and services sector of the local economy. In addition, the upward effect of non-participating farmers' incomes also would have helped the consumer goods sector.

Total Effects on the Community

Participants in Ohio reduced their purchases of producer goods and services an estimated \$8,745,417. The reduction in sales of farm products amounted to an estimated \$17,048,708 from participating farms. However, the family income of participants was increased by \$2,544,300. The improvement in gross and net farm income of non-participating farmers would be expected to more than offset the loss of farm product sales and production good purchases of participants in Ohio.

Some individual communities may have been adversely affected by the program, while others benefited. The extent the total flow of money was affected in a local community depended upon the proportion of cropland acres enrolled in the program, the net change in the income of participating families from other sources,

and the degree of profitableness of farming before entering the Conservation Reserve.

In communities with a relatively high proportion of the cropland acres enrolled in the program (15 to 25 per cent), relative to the United States as a whole, the flow of money in the local community would be expected to decline. The gross farm income of those not participating in the community with high participation would not be increased sufficiently to offset the reduced gross farm income of participants. However, in those communities having land enrolled in the program near or below the national average percentage of about 6.3 per cent of the cropland in the program, the flow of money in the total community should be improved over what it would have been without the program.

Local governments' tax receipts in Ohio were not affected appreciably since these resources come primarily from real estate. A very small decline would occur because of a reduction in chattel taxes. Participants in Ohio generally remained in the local community. Conservation Reserve participants would continue to provide their share of these social costs in about the same proportion as before.

Sales tax collections are a major source of income for the state government. Sales tax collections should increase since family disposable income increased. Gasoline tax revenues probably increased because of more auto use. Ohio farmers receive tax rebates for gasoline used on farm land.

Federal excise and luxury taxes probably were increased because the disposable income of families was increased. The effects on Federal income tax collections are difficult to determine. They would increase for those under 65 years of age. Many under 65 had an increase in net income. Since the program encouraged many older people to retire and draw Social Security who otherwise might have continued to farm and pay Social Security tax, to apply for Social Security benefits, then the lost payments and benefits also would be an added cost.

Appendix Exhibit 1

LAND CAPABILITY CLASSES¹

Classes I, II, and III include the land that is suited for regular cultivation, and Class IV the land that can be safely cultivated only occasionally; that is, in a limited way. Classes V, VI, and VII include the land that is not suited for cultivation but is suited for grazing or forestry. Class VIII is reserved for the land that is not suited for cultivation, grazing, or forestry.

.....

Class I is very good land from all points of view. It is nearly level and does not wash readily. The soil is deep and easy to work. It holds water well and is at least fairly well supplied with plant nutrients. Such land is scarce in many localities. It is not present at all on some farms It should be managed so that a good supply of plant nutrients and good physical condition are maintained.

The other classes are farmed with greater difficulty or greater risk than the Class I land.

Class II is good land from every standpoint, but certain physical conditions make it not quite so good as Class I land. The slope may be just steep enough to make water run off at a speed which will carry away soil. Some Class II land is naturally wet and requires drainage. Some has not quite as good water-holding capacity as Class I land. Each of these deficiencies either limits the use of the land to some extent or requires some special attention year after year. Even a single farm can have two or more variations of Class II land

Since Class II land has some moderate, neutral use limitation, some special treatment is called for, such as easily applied conservation practices like contouring, protective cover crops, simple water management, crop rotations, and the use of fertilizers.

Class III is moderately good land for cultivation. It is more limited in use than Class II land by reason of one or more natural features. It can be used regularly for crops but, because of these natural restrictions, intensive treatment of some kind is called for. Several variations occur in Class III, as they do in Class II. Some Class III land is moderately sloping and must have intensive care to control erosion if used for crops in a regular rotation. Another variation of Class III land calls for water management because of poor drainage.

¹ This section was taken from Robert M. Reeser, "Land Use in Ohio, Trends, Prospects and Evaluation," Ph. D. Dissertation, The Ohio State University. It is comprised of excerpts from J. G. Steel, "The Measure of Our Land" (Washington: Soil Conservation Service, 1951). pp. 5, 6, and 12.

Appendix Exhibit I (continued)

Class IV land is good enough for occasional cultivation under careful management, but it is not suited for regular production of cultivated crops. A large part of it is too steep for regular cultivation primarily because of the danger of erosion. Generally speaking, it can be cultivated safely perhaps 1 year in 6; in the other years its best use is for pasture or hay

Class IV land, then, is only fairly good for crops other than grass. As a rule it is good grazing land and where rainfall is adequate it is good forest land.

Class V land is nearly level and not subject to erosion. Because of wetness, climate, or some permanent obstruction like rock outcrops, it is not suited for cultivation. The soil is deep, however, and the land has few limitations of any kind for grazing or for forestry use. Good management is of course needed for satisfactory production with either grass or trees.

Class VI land is not suitable for any cultivation, and it is limited somewhat for grazing or forestry by such features as shallow soil or steep slopes. Wherever the rainfall is adequate for crop production, the limitations of Class VI land are most likely to be steep slope, shallow soil, or excessive wetness that cannot be corrected by drainage to permit use for crops. In arid and semi-arid regions lack of moisture is the principal reason for putting land in Class VI. This is good land for forestry or for grazing, although not so good as parts of the cultivable land classes.

Class VII is not only unsuited to cultivation, but has severe limitations for use for grazing or for forestry. It requires extreme care to prevent erosion. In rough timbered areas its use for either grazing or lumbering requires special care.

Class VIII land is suited only for wildlife, recreational, or watershed purposes. Usually it is extremely arid, rough, steep, stony, sandy, wet, or severely eroded. Rocky foothills, rough mountain land, bare rock outcrops, coastal sand dunes, much marsh and swamp land, and very arid land not suited for any grazing are examples of Class VIII land.

Appendix Table I

Total Acres of Cropland and Acres and Percent of Cropland
in the Conservation Reserve by Counties, Ohio, 1960

County	Total Acres of Cropland	Acres in Conservation Reserve	Percent
Adams	137,891	1,379.40	1.00
Allen	166,363	2,873.00	1.73
Ashland	134,632	13,127.80	9.75
Ashtabula	133,645	15,273.60	11.43
Athens	44,954	5,442.30	12.11
Auglaize	187,921	3,922.90	2.09
Belmont	82,827	720.70	.87
Brown	191,309	4,256.00	2.22
Butler	144,358	7,226.21	5.01
Carroll	80,928	2,193.40	2.71
Champaign	182,295	7,983.90	4.38
Clark	159,898	6,543.01	4.09
Clermont	113,259	9,563.70	8.44
Clinton	195,098	13,666.50	7.00
Columbiana	114,028	8,571.00	7.52
Coshocton	116,577	5,005.20	4.29
Crawford	182,766	5,591.69	3.06
Cuyahoga	12,030	131.40	1.09
Darke	293,052	8,147.60	2.78
Defiance	185,043	5,076.80	2.74
Delaware	169,709	16,942.10	9.98
Erie	88,164	1,809.10	2.05
Fairfield	197,341	12,160.77	6.16
Fayette	209,118	3,910.16	1.87
Franklin	157,092	7,699.92	4.90
Fulton	205,028	1,392.67	.68
Gallia	52,917	249.50	.47
Geauga	56,252	4,082.30	7.26
Greene	169,052	2,772.90	1.64
Guernsey	79,550	592.70	.75
Hamilton	40,979	250.60	.61
Hancock	272,113	1,207.23	.44
Hardin	214,350	6,489.20	3.03
Harrison	43,151	2,548.90	5.91
Henry	218,100	1,740.20	.80
Highland	219,469	15,318.80	6.98
Hocking	39,750	3,923.10	9.87
Holmes	121,377	5,808.40	4.79
Huron	194,233	8,365.00	4.31
Jackson	52,185	5,069.50	9.71
Jefferson	44,317	808.90	1.83
Knox	163,937	10,701.90	6.53
Lake	28,492	573.00	2.01
Lawrence	31,171	238.20	.76
Subtotal	5,926,721	241,351.16	xx

Appendix Table I (continued)

County	Total Acres of Cropland	Acres in Conservation Reserve	Percent
Licking	197,006	13,594.10	6.90
Logan	172,721	14,729.20	8.53
Lorain	135,443	6,374.60	4.71
Lucas	87,470		
Madison	222,903	6,816.50	3.06
Mahoning	71,314	12,261.90	17.19
Marion	185,599	3,443.80	1.86
Medina	115,884	13,976.20	12.06
Meigs	47,432	2,819.93	5.95
Mercer	232,534	6,097.14	2.62
Miami	178,991	3,440.10	1.92
Monroe	48,856	468.80	.96
Montgomery	132,268	9,565.40	7.23
Morgan	49,913	3,163.65	6.34
Morrow	139,275	14,385.60	10.33
Muskingum	104,556	6,220.30	5.95
Noble	55,703	1,608.50	2.89
Ottawa	101,089	1,387.30	1.37
Paulding	209,468	2,504.91	1.20
Perry	74,118	6,771.50	9.14
Pickaway	251,420	5,441.20	2.16
Pike	64,647	6,222.90	9.63
Portage	93,240	5,783.90	6.20
Preble	187,596	8,600.35	4.58
Putnam	251,867	2,344.84	.93
Richland	137,901	20,010.54	14.51
Ross	195,367	5,017.78	2.57
Sandusky	191,154	929.70	.49
Scioto	59,495	1,215.80	2.04
Seneca	258,202	6,199.80	2.40
Shelby	182,682	7,445.70	4.08
Stark	138,897	7,633.10	5.50
Summit	31,374	1,960.03	6.25
Trumbull	102,750	7,400.40	7.20
Tuscarawas	111,641	4,450.00	3.99
Union	192,598	17,414.80	9.04
Van Wert	219,029	5,280.13	2.40
Vinton	24,077	2,150.17	8.93
Warren	125,260	17,121.40	13.67
Washington	69,915	1,479.40	2.12
Wayne	198,842	8,069.12	4.06
Williams	186,650	6,227.54	3.34
Wood	299,144	1,179.37	.39
Wyandot	192,368	4,067.12	2.11
Ohio Total	12,255,370	524,784.88	4.28

Source: Ohio Agricultural Stabilization and Conservation Committee, Old Post Office Building, South Third and East State Streets, Columbus 15, Ohio.

United States Bureau of the Census, Census of Agriculture, 1959
Ohio Preliminary, United States Department of Commerce, United States Govern-
ment Printing Office, Washington 25, D. C., 1959.

Appendix Table 2

Tons of Fertilizer and Fertilizer Nutrient Tons Sold with Indices and Farm Marketings and Government Payments and Deflated Index for Ohio with Fertilizer Price and Deflated Index for the United States, 1936-1959

Year	Consumer Price Index 1947-49=100	Farm Marketings and Government Payments			Fertilizer Sales		Fertilizer Nutrients Sold		Fertilizer Prices	
		Current Dollars (000)	Constant 1947-49 Dollars (000)	Constant Index 1947-49=100	Sales (Tons)	Index 1947-49=100	Nutrients (Tons)	Index 1947-49=100	Index 1947-49=100	Constant Dollars 1947-49=100
1936	59.3	356,300	600,843	60.0	337,146	39.44	66,124	34.0	68	114.7
1937	61.4	369,600	601,954	60.1	362,206	42.38	72,899	37.4	72	117.3
1938	60.3	317,700	526,866	52.6	324,228	37.93	65,906	33.9	71	117.7
1939	59.4	332,600	559,933	55.9	345,585	40.43	69,667	35.8	70	117.8
1940	59.9	334,600	558,598	55.8	363,320	42.51	77,775	40.0	69	116.2
1941	62.9	438,627	697,340	69.7	392,677	45.94	83,705	43.0	69	109.7
1942	69.7	607,000	870,875	87.0	412,127	48.22	89,659	46.1	76	109.0
1943	74.0	718,600	971,081	97.0	531,050	62.13	111,260	57.2	81	109.5
1944	75.2	737,900	981,250	98.0	593,857	69.48	126,585	65.0	83	110.4
1945	76.9	764,436	994,065	99.3	636,173	74.43	137,469	70.6	84	109.2
1946	83.4	896,800	1,075,300	107.4	730,262	85.44	156,603	80.5	85	101.9
1947	95.5	1,004,900	1,052,251	105.2	775,512	90.73	179,921	92.4	93	97.4
1948	102.8	1,046,900	1,018,385	101.7	890,800	104.22	189,868	97.6	102	99.2
1949	101.8	948,800	932,024	93.1	897,902	105.05	214,150	110.0	105	103.2
1950	102.8	902,300	877,724	87.7	932,504	109.10	227,892	117.1	101	98.2
1951	111.0	1,065,000	959,459	95.9	939,120	109.87	243,040	124.9	106	95.5
1952	113.5	1,085,600	956,476	95.6	1,117,163	130.70	299,237	153.7	109	96.0
1953	114.4	1,049,800	917,657	91.7	1,108,058	129.64	300,726	154.5	110	96.2
1954	114.8	1,032,600	899,477	89.9	1,015,540	118.81	293,367	150.7	110	95.8
1955	114.5	997,400	871,092	87.0	1,094,307	128.03	334,211	171.7	109	95.2
1956	116.2	1,026,900	883,735	88.3	1,018,540	119.16	317,708	163.2	106	91.2
1957	120.2	1,022,300	850,499	85.0	1,034,524	121.03	325,335	167.1	107	89.0
1958	123.5	1,017,600	823,968	82.3	1,055,024	123.43	373,421	191.8	107	86.6
1959	124.6	955,700	767,014	76.7	1,056,556	123.61	359,232	184.6	106	85.1

Source: Council of Economic Advisors, Economic Indicators, Joint Economic Committee, 86th Congress, 2nd Session, United States Government Printing Office, Washington 25, D. C., October, 1960.

O. L. Musgrave, et. al., Ohio Fertilizer Sales Reports, Agricultural Extension Service, The Ohio State University, Columbus 10, Ohio, Annual Report, 1936-1960.

Agricultural Research Service, The Farm Cost Situation, United States Department of Agriculture, Washington 25, D. C., November 16, 1960.

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