ABSTRACT

AN EVALUATION OF THE AGRICULTURAL CONSERVATION PROGRAM'S PERFORMANCE IN FULFILLING PROGRAM AND POLITICAL OBJECTIVES

by K. William Easter

Little is known concerning an optimum expenditure plan for government programs such as the Agricultural Conservation Program (ACP). Approximately 250 million dollars is spent annually through ACP but the effectiveness of these expenditures is unknown. There is a definite question as to what ACP is achieving: Does it bring about conservation of land resources or does it cause overproduction and a misallocation of resources? To answer these and other questions, an estimate of ACP's past performance is needed so more efficient programs can be devised; that is, ones achieving a greater quantity for a given cost, or obtaining a specific quantity at a lower cost.

Given this problem situation, the thesis objectives are: (1) to obtain a better perspective of ACP and to determine its objectives, (2) to obtain an understanding of ACP politics and administration as well as the different groups involved in each, (3) to compare ACP's past performance and accomplishments with the objectives and determine if the

same could have been accomplished at a lower cost and (4) to suggest guidelines for improving ACP's performance.

The analysis of politics and the administrative structure influencing ACP policy shows a multitude of objectives have been imposed on the program and policy formulation has passed from the Secretary of Agriculture to the appropriation subcommittees. At the state and county level of administration, the formula for allocating funds is shown to promote their use in any way possible, with little regard for program objectives. This, along with conflicts between objectives, helps push those administering ACP into developing alternative objectives.

The distribution of payments from 1946-63 shows a wide difference between regions of the United States. For example, in all but two of the Western states, ACP used over 50 percent of its payments to improve irrigation systems, while in the Midwestern and Lake states a high proportion went for drainage and minerals. In the Plains states a high proportion of payments was used for temporary practices and in all but two of the Eastern states over 50 percent went for minerals.

The analysis of practice adoption in relation to cost-share payments indicates the same practice use could have been obtained at a lower cost. First, the program has increased practice adoption but not without making payments

to farmers who would have applied the practice without assistance. Second, the response of six practices in Michigan to alterations in cost-shares, measured by a "response elasticity," shows a significant difference among practices. This indicates that by shifting ACP funds among practices a larger acreage could be covered at the same expenditure. Finally, the promotion of objectives such as income support and aid to small farmers increases the cost of obtaining a given practice adoption.

If fulfillment of program objectives is desired, a number of changes in ACP's institutional structure should be considered. Payments should be limited on certain practices to once per farmer or reduced after initial practice adoption. Provisions should be developed allowing ACP to make higher payments to certain farmers in problem areas without having to offer them to all farmers. There should be a further use of the package practice approach, including the elimination of practices contributing very little to conservation or land-use adjustment and using such practices only as part of another with high land-use adjustment or conservation benefits. Finally, the formula for allocating funds should be changed to put major emphasis on how funds have been used. Without these changes, a substantial proportion of ACP's appropriations will continue to be spent in a manner not meeting program objectives.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The federal government during the brief eight years from 1953 to 1960 spent almost 14 billion dollars on the development and conservation of United States' natural resources. Of this 14 billion over 11 billion, or 80 percent, was spent for the conservation and development of land resources. The Agricultural Conservation Program (ACP) is one of the programs through which the federal government has spent these funds. And from 1953 to 1960, over 2 billion dollars or about one-fifth of the total federal funds used for the conservation and development of land resources was spent under ACP.

ACP was initiated in 1936 as a program primarily to control farm production and secondarily to promote soil conservation. The program was conducted by making payments to farmers who used specified cropping programs. During World War II overproduction was no longer a problem, so in 1943 production control was dropped as an official objective of the program. Since 1944 approximately 250 billion dollars has been spent annually under ACP to promote the conservation

of soil, water, and wildlife aspects of land by cost-sharing with farmers who conduct approved conservation practices. And in the fifties program objectives were further broadened to include land-use adjustment away from intensive crops as surplus production again became a problem.

Problem Situation

Few if any well developed research procedures are available for evaluating government programs. Little is known concerning an optimum expenditure plan for government programs such as ACP. Federal funds have been spent on conservation of land resources through ACP for almost three decades and the returns from these expenditures and their effectiveness in fulfilling program objectives is still unknown.

T. W. Schultz showed his concern for the lack of research on soil conservation investment in his paper before the American Farm Economic Association:

> Concern about soil conservation served a useful purpose three decades ago when there was little investment in conservation. Now that there is too much, our analytical guns are strangely silent. The production and welfare effects of large income transfers into agriculture are grossly neglected.[1]

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[1] T. W. Schultz, "Changing Relevance of Agricultural Economics," Journal of Farm Economics, Vol. 46 (December 1964), p. 1006.

ACP has been criticized as being one of the soil conservation investments which has helped to cause overproduction and has been an income transfer to input industries and large farmers. The ACP subsidy lowers the price of some inputs to the farmer and thus increases their use both relatively and absolutely. This brings about increased production when we are trying to reduce the rate of expansion in production and a misallocation of resources to agriculture. Hathaway argues, for instance, that the program is at best an income transfer from the economy at large to nonfarm producers.[2] In fact, it has been said that the tile drain industry was built on the basis of the ACP subsidy. Similarly Robert M. Kock, President of the National Limestone Institute, Inc. has stated that ACP has subsidized a little over 81 percent of the aglime used in the past 26 years (1936-61).[3] Thus, there may be a substantial redistribution of income in favor of a few input industries.

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[2]Dale Hathaway, Government and Agriculture: Public Policy in a Democratic Society (New York: The MacMillan Co., 1963), p. 313.

[3]"Let me remind the committee that the highest annual rate of liming application prior to the ACP was 3 million tons a year and frequently it fell to 1 million a year. According to USDA reports during the 26 year period, the ACP was responsible for 439 tons of aglime of the 541 million tons used." U.S. Congress, Senate, Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1964, 88th Cong., 1st Sess., p. 1250.

On the other hand, ACP has been justified on the grounds that it is paying society's share of the cost of conserving the nation's land resources. The subsidy is needed since all the benefits from conservation of land resources do not accrue to the farmer. ACP has also been defended as a program that gives the initial incentive necessary to start farmers using profitable conservation practices not initially undertaken without assistance due to uncertainty, lack of knowledge or education. Once the benefits from the conservation practice have been demonstrated the farmer will continue its use without any further assistance from ACP.

Not only is there the question of what ACP is achieving but also that of whether the accomplishments could have been achieved at a lower cost. To answer these and other questions one needs an estimate of ACP's past performance. With some knowledge of ACP's past performance the ability to fulfill objectives can be estimated and more efficient methods of obtaining its objectives can be suggested; that is, methods which achieve a greater amount for a given cost, or which achieve a specified amount at a lower cost. Therefore, measures of performance are needed in the search for better programs as well as better combinations of practices within a program, such as ACP.

Objectives

Given this problem situation the first objective is to obtain a better perspective of ACP and to determine its objectives. The second is to obtain an understanding of ACP politics and administration as well as the different groups involved in each. Here I will also attempt to delineate the objectives other than program objectives that may be fulfilled by ACP. The third task of the thesis is to compare ACP's past performance and accomplishments with its various objectives and determine if the same results could have been accomplished at a lower cost. The final objective is to suggest guidelines that can be used to improve ACP's performance so that it is directed towards the conservation and land-use adjustment problems of today as well as those of the future.

Method of Analysis

Before analyzing ACP two basic decisions had to be made: (1) what techniques and data should be used to measure ACP's performance, and (2) what should the performance be measured against? Due to the availability of cost and practice use data dealing with ACP both at the state and national level, comparative analysis of time-series data was used. For the analysis of some specific objectives and to determine how the program operates at the local level, data was collected from selected Michigan counties. Thus, there were

three major sources of data: (1) Annual Statistical summaries published by the USDA giving practice use and cost according to state and practice, (2) Michigan county data published by the state ASC Committee according to groups of practices and (3) data collected from 16 Michigan counties showing how a sample of 265 farms used ACP.

The question that had to be answered first was what should the performance be measured against. Two alternatives were considered: (1) the needs for conservation and land-use adjustment and (2) the program objectives. The latter was selected partially due to the difficulty of establishing something called conservation needs. The Conservation Needs Inventory (CNI) conducted by SCS attempts to specify conservation needs but is much too general to use in determining the specific types of conservation practices needed. CNI gives the number of acres not meeting SCS standards though it does not say how far these acres are from meeting the standards. The sampling procedure used for CNI does not allow one to specify conservation needs for individual counties. On the other hand, program objectives have been set down by Congress and provide a relevant measure of performance. But the objectives are very difficult to quantify, placing limits on the analysis and the conclusions that can be drawn.

The next step was to determine the explicit and implicit program objectives. Following a brief review of soil conservation and ACP studies in Chapter II, Chapter III presents an analysis and discussion of the explicit program objectives. Here ACP's development is traced from 1936 through 1964 showing how the various objectives have changed. Chapters IV and V indicate how implicit objectives are interjected into the program through politics and those administering ACP. To begin with, the discussion will center on the importance of politics and its influence on ACP policy. Then, based on interviews with Michigan state and county administrators, the administration of ACP is evaluated.

The second section includes an analysis of ACP's past performance and compares it with various objectives. Data giving the distribution of past ACP payments and their estimated physical accomplishments is used to analyze ACP. In most cases the data was not in categories or units that facilitated analysis. So the data was rearranged and regrouped to provide insights into the program's performance. In Chapter VI, nine states and the total United States are studied from 1946 to 1963 to determine if the distribution of funds is consistent with program objectives and if there is a difference over time and between regions in the degree of fulfillment of objectives. The analysis will also attempt to determine the impact of specific program changes

on fulfillment of objectives, such as the change to a package practice in 1954.

After the analysis of funds distribution indicates how ACP has spent its money, Chapter VII considers whether the same could have been accomplished with lower expenditures. Here the analysis is limited to the cost side since data is not available giving dollar practice benefits, as the question of how much to invest in ACP is not completely answered. First, have the ACP payments actually increased the use of conservation practices? Practice use under ACP is compared with the total conservation practice used over time to indicate if ACP has increased practice use without paying for practices farmers would do on their own. This will be followed by an analysis of ACP's cost-share per unit of practice and practice use to determine if the same performance could have been obtained at a lower cost. The effect of changes in cost-share on practice use will be measured by a "response elasticity." If changing cost-share rates do not influence use, then this will have profound implications for ACP's minimum cost objective.

The final section in Chapter VII considers other objectives to ascertain if attempts to fulfill them have increased ACP costs. Here participation, the proportion of temporary practices, size of payments, and farm size are

analyzed to determine the impact of alternative objectives on costs. Then in the final chapter the conclusions are summarized and guidelines are suggested for ACP's future operation.

CHAPTER II

STUDIES EVALUATING SOIL CONSERVATION AND ACP

To date no study provides a comprehensive analysis of ACP's performance, but there are a number of related studies that can be grouped very generally into two categories: (1) soil conservation studies that analyze the effect of conservation practices on the farm plan and (2) studies that specifically consider some aspect of ACP. A review of soil conservation studies in a book by Held and Clauson has just recently been published, but at present no review is available on the latter category.[1] This chapter will first evaluate the more recent soil conservation studies followed by a brief review of the studies that consider ACP specifically.

Both the United States Department of Agriculture and the land grant colleges have analyzed the problems of soil conservation. Some have tried to find the factors that inhibit the adoption of soil conservation practices while

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[1] R. Burnell Held and Marion Clawson, Soil Conservation in Perspective (Washington: The Johns Hopkins Press, 1965), 344 pp.

others have attempted to estimate costs and returns on soil conservation practices or plans; the latter group will be evaluated in this chapter.

First a very general model is presented for evaluating soil conservation practices. The variables that should be considered in analyzing soil conservation are brought together within the model. After the model is presented and briefly discussed it will be followed by the review of the soil conservation studies. The review considers (1) how the important variables were treated, (2) how the soil conservation practices or plans were evaluated, and (3) how the Agricultural Conservation Program (ACP) was included in the analysis.

The model suggested for evaluating soil conservation practices discounts returns over time to obtain the present value of a soil conservation practice. It should be noted that an implicit assumption is involved in using a discounting procedure to cumulate returns. Any rate of discount greater than zero assumes that future consumption or income is of less value than present consumption or income. This, however, may not always be true for at some level of consumption the consumer or society places an increasingly lower value on present than on future goods and vice versa.[2]

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[2]E. O. Heady and C. W. Allen, Returns From and Capital Requirements for Soil Conservation Farming Systems: A Study of a Specific Population of Farms and Soils, Research Bulletin 382 (Ames, Iowa: Iowa State University, 1951), pp. 316-60.

The Model

$$Z = \sum_{k=1}^{n} \left[\frac{\left[\sum_{i=1}^{w} Q_i P_i - \sum_{j=1}^{z} R_j V_j \right] - \left[\sum_{i=1}^{y} Q_i P_i - \sum_{j=1}^{u} R_j V_j \right]}{(1 + r)^k} \right]$$

Z = Present value of a soil conservation practice

P_i = Prices of products 1 to w with conservation and 1 to y without conservation

Q_i = Quantities of products 1 to w with conservation and 1 to y without conservation

R_j = Rate of use of inputs 1 to z with conservation and 1 to u without conservation

V_j = Prices or values of inputs 1 to z with conservation and 1 to u without conservation

r = Discount rates

k = Years the conservation practice is in use 1 to n.

The model includes the variables that should be considered when evaluating soil conservation practices at the farm level. The farmer is interested in the difference in net income between farming with a conservation practice as compared to farming without the practice. Hence, the variables to consider are the present and future prices of inputs and products, the quantities of products produced, the rates of use of inputs and finally the length of the planning period and the rate at which future income will be discounted. With this information the farmer can determine

the value to him of a particular soil conservation practice be it zero, negative or positive. Once the present value of the soil conservation practice has been determined, the farmer can make his decision as to whether or not the present value is large enough for him to initiate the practice.

The use of soil conservation practices may or may not require a reorganization of the farm. Thus, the products produced (1 to w) with the soil conservation practice may or may not be the same as the products produced (1 to y) without the practice. For example, planting more pasture to conserve the soil may require livestock in the farm plan to maximize profits; contouring, on the other hand, may not require any change in the farm production plan.

How does the model differ from that which would be constructed if one were determining the present value of a soil conservation practice for the nation as a whole? To take into account the national view one must modify several variables and add others that consider the benefits and costs accruing to individuals other than the farmer. External effects would include benefits to

> downstream farmers living on flood plains, sportsmen who desire clean streams for recreation, passing motorists who like to see a countryside covered with kinds of vegetation, owners of downstream reservoirs who wish to minimize silting, city dwellers and businessmen who desire a clean source

of water from streams, and all who are interested in preserving resources for future generations.[3]

Consideration of national welfare may also influence variables in the model. Both the planning period and interest rate for discounting may be different from the nation's point of view as compared to the farmer's. Marglin argues that society is more likely to have a planning period greater than one generation and may value future consumption more highly than does an individual.[4] To have a complete model for evaluating conservation practices one should consider a range of possible interest rates and planning periods.

Review of Soil Conservation Studies

To facilitate evaluation, the soil conservation studies, with one exception, can be grouped under the general heading of those that consider the complete farm operation. In other words, they were mostly concerned with the total farm plan rather than with any particular conservation practice. In most cases it was difficult to separate the increase or change in income due to soil conservation practices

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[3] H. A. Henderson, F. F. Bell, and M. D. Cunningham, Economics of Farming Systems for Conservation on a Low Production Farm in the Upper East Tennessee Valley, Bulletin 362 (Knoxville, Tennessee: University of Tennessee, 1963), p. 21.

[4] S. A. Marglin, "The Social Rate of Discount and the Optimal Rate of Investment," Quarterly Journal of Economics, February 1963, pp. 95-111.

from the increase or change due to management or other inputs. Most of the studies considered the costs and returns to the farmer under very restrictive conditions, while a few went further and considered the effects on net income of changes in the discount rate, price relationships, yield differences and planning periods. But none of the studies tried to include external benefits or costs that did not affect the farmer directly.

To begin the evaluation, how were the variables included in the above model handled in the studies reviewed? In all but one case, base periods were used for the relative price relationships of inputs and products. Only one study tried to project the future price relationships, although several studies did use different base periods where the relative prices had changed.[5] This at least allowed a comparison of net incomes under different sets of relative prices and brought out their importance in determining the returns to soil conservation practices. Most of the researchers were content to select one set of prices, consequently assuming away one of the key problems in evaluating conservation. Further work is needed to determine the relative price relationships to be used in evaluating soil

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[5]N. E. Landgren and J. C. Anderson, A Method for Evaluating Erosion Control in Farm Planning (Ames, Iowa: 1962), pp. 57-65.

conservation practices. Will prices of inputs used on the farm tend to go up while agricultural product prices tend to go down? This may well happen, particularly if farm price supports are lowered or dropped. It is also important to note that the lowering of agricultural product prices may be one of the big external benefits that society obtains from programs like ACP and SCS.

Yield changes due to soil conservation practices are another important variable not handled satisfactorily in most of the studies. No one has actually carried out extensive tests to determine yield differences between land with soil conservation practices and the same quality of land without. Some of the studies made farm surveys grouping the farms into low, medium and high conservation farms. The differences in yields on these farms were attributed to conservation. Others used expert advice from agronomists and available research data to make estimates of yield changes due to soil conservation. Still others made projections of yield decrease from estimates of soil losses on land not protected by soil conservation. Although some data are available along with expert advice, there seems to be a need for research to determine how much of the yield increases can be attributed to conservation and how much is due to a greater use of management or other inputs.

The second component of the quantity variable, acres, was not important in all the studies. In the study by Coutu and others only cotton-tobacco farms were studied and the number of acres devoted to one crop was assumed to be the same with soil conservation practices as without.[6] In the majority of other studies, changes in acres or number of animals became an important aspect since soil conservation required a farm reorganization. More pasture might be planted at the expense of corn or other cash crops. Studies that required a farm reorganization found it very difficult to separate soil conservation returns from returns due to other inputs.

Another important variable is the quantity of inputs added by the use of a soil conservation practice. Sauer and Case indicate the difficulty involved in separating out the extra management required when using soil conservation practices.[7] Heady and Allen point out that the soil conservation practices did not necessarily give rise to the increase

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[6] A. J. Coutu, W. W. McPherson, and L. R. Martin, Methods for Economic Evaluation of Soil Conservation Practices, Technical Bulletin 137 (Raleigh, North Carolina: Agricultural Experiment Station, 1959), 48pp.

[7] E. L. Sauer and H. C. M. Case, Soil Conservation Pays Off (Results of ten years of conservation farming in Illinois), Bulletin 575 (Urbana, Illinois: University of Illinois, 1954), 24 pp.

in net income, since the high conservation farms used more inputs and had a larger volume of business.[8] Each study handles the problem a little differently and those considering individual soil conservation practices, rather than the total farm plan, were better able to designate the extra inputs necessary for soil conservation. In determining the extra cost of conservation, one should be careful to include all the extra inputs required for construction, maintenance and operation of the soil conservation practice. Certain studies appeared rather careless in their consideration of extra inputs required for the soil conservation practices and left out some of the costs.

Another important point to consider, that involves not only the input cost but the planning period and interest rate as well, is the manner in which the costs are charged. The way costs of soil conservation practices are deducted will have an important effect on present values of the practice. Some of the studies deducted the full amount of the installation cost in the first year, while others deducted the costs over time at a given percentage rate. The former method reduced income in the beginning years substantially more than did the latter. Consequently, one must know how

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[8] E. O. Heady and C. W. Allen, Returns From and Capital Requirements For Soil Conservation Farming Systems: A Study of a Specific Population of Farms and Soils, Research Bulletin 381 (Ames, Iowa: Iowa State College, 1951), pp. 316-60.

how the costs were deducted when looking at the net income reported, for some may be understated while others are overstated.

The effects of interest rate and the length of planning period have already been partially discussed. These variables may differ depending on whether one considers the nation or an individual farmer; they will also vary among farmers. Coutu and others realized the problem involved and reported their results at several interest rates and planning periods. But for the most part, the studies considered only one or two possibilities or did not even worry about the problem. More work needs to be done along the lines of the study by Coutu and others where a range of possible planning periods and interest rates are used.[9]

The second group of problems to consider is that dealing with the methods of comparing costs and returns. Many of the studies used more than one method for evaluating soil conservation, but as was already mentioned none of the studies considered external soil conservation benefits or costs. The costs and returns calculated were those a farmer would base his decision upon rather than those on which to base a public policy decision.

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[9]Coutu, op. cit.

Budget analysis was the primary technique used to determine the costs and returns, although linear programming was used in a number of the studies. One widely used and misleading comparison was to show net income budgeted for a farm employing soil conservation practices as compared to the same farm without soil conservation practices. Such a comparison does not consider the transition period and the net income while the farmer builds up his conservation program. The transition period may be five or more years and has an important effect on the net income a farmer can expect. The reason for eliminating the transition period probably stems from a bias of some researchers towards conservation and a desire to show that soil conservation pays. What is needed is not a misleading picture of net returns from soil conservation practices, but a complete designation and consideration of all the costs and benefits, particularly the external ones.

Other methods of evaluating soil conservation practices, giving similar misleading results, are comparisons of high and low conservation farms. These studies compare net returns, labor income, returns on capital, net returns per variable costs or total receipts. This procedure forgets the transition period and compares farms using established soil conservation practices with those lacking such practices. The procedure may also attribute benefits to

conservation that properly should be allocated to management or other inputs.

A better way to evaluate soil conservation practices would be to consider the cost and returns accumulated or discounted over a given time period. Different time periods and discount rates could then be used to account for the various time preference of farmers and the nation. The important consideration is that the returns or net income are determined over the relevant planning period. Most farmers are interested in what their net income will be within a limited time period and not at some indefinite point in time, undefined in many studies.

Linear programming was also used in a number of studies to obtain the optimum plan for the farm. Two major criticisms can be levied against these studies. The first has already been stressed, that of comparing the net income of the present farm with the net income of the same farm after having been completely reorganized under a new soil conservation plan. Here again the important matter, at least to many farmers, is the transition period.

The second criticism stems from a restriction in these particular linear programs allowing only farm plans that maintain soil losses below 3 to 7 tons per acre per year; the exact soil loss allowed varied between studies. Similar restrictions appeared in some of the studies using

budget analysis that considered only those farm plans keeping soil losses to a certain level. Such restrictions eliminate what may be the most profitable farm plans for the farmer, particularly if he has a short planning period. Another question raised by such restrictions is how important is 7 tons of soil per acre if the top soil is deep and subject only to sheet erosion?

The programming studies that relaxed the soil loss restriction found restrictions below 5 or 6 tons per acre per year sharply reduced the net income on the farm. Landgren and Anderson in their study of a Southwestern Iowa watershed found

> from the point of view of the individual farm operator, income consequences of formulating the farm around too low an erosion control goal would be far more serious than erring in the direction of inadequate conservation planning.[10]

This tends to indicate the soil loss restriction must be considered carefully and should be further evaluated.

Most of the studies considered the total farm program and did not evaluate individual soil conservation practices, which in turn made it difficult to evaluate individual ACP cost-share arrangements. These studies were made in areas and on farms with considerable erosion problems. The results from such studies, therefore, hardly apply to flat

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[10]Landgren, op. cit., p. 65.

areas with no erosion problems which, it should be noted, receive their share of ACP payments.

With the exception of one, those studies considering ACP in their analysis either included it in their cost calculations, thus reducing costs, or just speculated on the effect it would have on the profitability of soil conservation practices. When ACP was incorporated in the cost calculations the costs were not calculated without ACP payments. This prevented any evaluation of the effect ACP might have on the adoption of soil conservation practices.

Only one study really compared costs and returns including ACP payments against costs and returns without. In this study, Coutu and others compared three soil conservation plans, including terracing. The cost of terracing was calculated for one conservation plan both with and without the ACP subsidy. A rather low cost-share figure of 60 dollars per linear mile of terrace was used and found to have little influence on the break-even point.[11]

In another study, Ball and others, speculating on the effect ACP would have on adoption of terracing, suggested terracing might be made more profitable than other non-ACP

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[11]Coutu, op. cit.

conservation practices, though a similar job of soil conservation would be achieved.[12] This suggests that at times ACP payments promote the use of certain soil conservation practices at the expense of others, rather than promoting soil conservation and paying society's share of the cost.

In summary this review, although not inclusive, has brought into better focus many of the problems involved in the evaluation of soil conservation. The review has also pointed out the neglect of ACP and the difficulties involved in using these soil conservation studies to evaluate the program. Thus, for any comprehensive evaluation of ACP, one must attempt a different method of analysis.

Studies of ACP

The second category of studies reviewed provided useful ideas for developing a method of evaluating ACP's performance. To begin with, works by Knapp, Hardin, and Parks analyze the politics of ACP. Knapp discusses the legislative action taken on ACP from 1940 to 1950.[13] He uses

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[12] Gordon A. Ball, E. O. Heady and R. V. Boumann, Economic Evaluation of Use of Soil Conservation and Improvement Practices in Western Iowa, Technical Bulletin 1162 (Ames, Iowa: Iowa State University, 1957), 87 pp.

[13] David Knapp, "Congressional Control of Agriculture Conservation Policy," Political Science Quarterly, Vol. 71 (1956), pp. 257-81.

ACP as a case study that reviews the role played by the congressional appropriation and agricultural committees in formulating ACP policy. He also points out, rather vividly, how the appropriation committees can dictate policy by their appropriation bills. Hardin considers ACP and how it relates to various other conflicting groups, such as Soil Conservation Service (SCS), Farm Bureau and Extension Service.[14] He points to possible ways of improving the USDA conservation programs and their objectives, besides bringing out the importance of political institutions in shaping policy. But his discussion of ACP covers only the period before the coordination of activities between SCS, ACP and the Forest Service (FS), as well as the change to the package practice approach.

Parks also considered the interrelationships and overlapping duties of the various USDA conservation agencies.[15] His analysis, however, was concerned mostly with SCS and only with ACP in relationship to SCS. Hathaway in a more recent analysis of agricultural policy commented on

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[14]Charles M. Hardin, "The Politics of Conservation: An Illustration," Journal of Politics, November 1951, p. 478; "Land or People?" Land Economics, Vol. 27 (May 1951), pp. 133-142; and The Politics of Agriculture (Illinois: The Free Press, 1952), 282 pp.

[15]W. R. Parks, Soil Conservation Districts in Action (Ames, Iowa: The Iowa State College Press, 1952), pp. 1-231.

the shortcomings of ACP.[16] He also presented a detailed analysis of the importance of the appropriations committees, discussing their role in agricultural policy.

Benedict and Schickele in books written in the early fifties discuss some of the shortcomings of ACP. Benedict questions whether ACP

> payments, as now handled constitute an efficient way of promoting conservation activities. Good practices are already in use on many farms, and some areas are far less subject to soil deterioration than others. It would seem logical that if a given amount of public money is to be spent for conserving soil it should be spent where the returns per dollar will be largest.[17]

He also suggests that "public expenditures on conservation should be held down in periods of heavy demands on the budget and when manpower and materials are in short supply."[18] Schickele found ACP needed overhauling in two respects: "(1) by redefining its objectives more precisely in terms of erosion control and (2) by directing conservation payments much more specifically to induce additional conservation practices on those lands most in need of them."[19] He

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[16]Hathaway, op. cit., pp. 183-286.

[17]Murray R. Benedict, Can We Solve the Farm Problem? (New York: The Twentieth Century Fund, 1955), p. 329.

[18]Ibid.

[19]Rainer Schickele, Agricultural Policy (New York: McGraw-Hill, 1954), p. 117.

further suggests that ACP expenditures would reap greater returns if they were split in halves and one used for income support while the other for conservation. He feels the income support is an implicit objective whose needs are distributed quite differently than conservation's.

Pickrel and Hathaway in a study of ACP during the early fifties attempted to determine whether ACP payments led to a more efficient use of resources.[20] They concluded ACP did promote the use of lime, particularly in times of tight money, and if ACP were discontinued liming may drop further below a desirable level on many farms unless there was an intensified education program regarding the value of lime.

In another study, Lee and Schallau discuss the forestry accomplishments under ACP in terms of cost-share payments, acreages affected, and the magnitude of the job necessary to meet long-range timber goals as set by the Forest Service.[21] They call for an increased use of ACP in forestry conservation, but may put too much faith in the ability of small private holdings to increase the output of

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[20]Luther Pickrel and Dale E. Hathaway, "Agricultural Conservation Payments and Farm Practices," Michigan Agricultural Experiment Station Quarterly Bulletin, Vol. 36, No. 3, (February 1954), pp. 318-330.

[21]Lee M. James and C. H. Schallau, "Forestry Practices Under the Agricultural Conservation Program," Land Economics, Vol. 37, No. 2 (May 1961), pp. 142-49.

timber to meet future needs. There is also some question as to whether or not they overstate future timber needs.

Two fairly current studies by Schmid and Cotner suggest the need for further evaluation of ACP. Schmid analyzed the effect of the 1954 change in policy on Michigan's ACP.[22] He showed that a shift occurred towards the long-term conservation practices, principally drainage, and that fewer people were getting greater assistance after the reorganization. His analysis was based on data published by the agencies administering ACP. Cotner tried to determine the degree of conflict between ACP and the surplus disposal programs of the USDA.[23] He found both discord and agreement between the conservation assistance, surplus commodity and income problem policies. His conclusions were drawn from an analysis of various states in different regions of the United States.

Finally, Held and Clawson in their very recent book devote a section of one chapter to ACP, as the primary emphasis of the book was on other apsects of soil conservation.

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[22]A. Allen Schmid, "Public Assistance to Land Resources in Michigan Under the Agricultural Conservation Program," Quarterly Bulletin, Vol. 44, No. 1 (May 1961), pp. 2-14.

[23]Melvin L. Cotner, The Impact of the Agricultural Conservation Program in Selected Farm Policy Problem Areas, Agricultural Economics Mimeo 943 (East Lansing, Michigan: Dept. of Agricultural Economics, Michigan State University, 1964), 23 pp.

ACP was found to be a costly program with expenditures about four times those of SCS. They concluded,

> ACP has probably contributed something to soil conservation, but is impossible to demonstrate that more soil conservation had been purchased by expenditure of funds in this way than could have been obtained by use of the same funds in another way.[24]

In conclusion, these studies provided much of the background necessary for the development of this thesis. From the discussions of politics and objectives came ideas for the next three chapters and from the studies evaluating ACP came ideas for the two chapters analyzing the program objectives. It is hoped that this thesis will build on the work already completed and provide a better background for future research.

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[24]Held, op. cit., pp. 175-92.

CHAPTER III

PROGRAM OBJECTIVES

This chapter reviews ACP's historical development to provide a better understanding of how its objectives have evolved. The primary emphasis will be on when and why ACP and its objectives have been altered.

During ACP's three decades of operation the program has been modified considerably. But some of the objectives stated in the preamble of the Soil Conservation and Domestic Allotment Act of 1936, technically an amendment to the Soil Conservation Act of 1935, apply today as they did thirty years ago. The five purposes set forth in the preamble are:

1. preservation and improvement of soil fertility
2. promotion of the economic use and conservation of land
3. diminution of exploitation and wasteful and unscientific use of national soil resources
4. the protection of rivers and harbors against the results of soil erosion in aid of maintaining the navigability of waters and water courses and in aid of flood control
5. re-establishment, at as rapid a rate as the Secretary of Agriculture determines to be practicable and in the general public interest, of the ratio between the purchasing

> power per person not on farms . . . and the maintenance of such ratio.[1]

The purposes that applied to ACP were grouped into two general objectives. First were reestablishment and maintenance of farm income at fair levels. This parity income objective at first played the major role but later was dropped as an explicit objective. The second objective, soil conservation,[2] involved the maintenance and improvement of soil fertility to meet the present and some future consumer demand for food and fiber. And soil conservation or just conservation has remained an objective throughout ACP's operation, although its definition and importance have changed.

After the program operated for several years, its purposes were translated into the two objectives of soil conservation and crop adjustment. Major emphasis was placed on

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[1]U.S.D.A., Complication of Statutes Relating to Soil Conservation, Marketing Quotas and Allotments, Soil Bank, Crop Insurance, Sugar Payments and Quotas, Price Support, Commodity Credit, Corporation and Related Statutes as of January 1, 1957 (Washington: U.S. Government Printing Office, 1957), 246 pp.

[2]Conservation is an ambiguous term which has been used to mean many things to many people. In this discussion conservation might be best considered as a program of action and not a body of scientific principles or a scientific discipline. In other words, conservation is just one possible plan for resource allocation and its definition will vary with the person or agency defining the particular program of conservation.

crop adjustment to reduce surpluses and hopefully to increase farm income; soil conservation remained the secondary objective. To meet these objectives farmers were paid to increase soil-conserving crops and soil-building practices and to restrict soil depleting or surplus crops. During the first four years of program operation, the USDA determined acreage restriction and soil-conserving practices in Washington, as they attempted to obtain a balance between supply and demand of food, feed and fiber crops.

In 1940, the program objectives shifted to a major emphasis on conservation. "They called specifically for more soil-conserving crops and for various other methods of conserving soil fertility."[3] Also in 1940, provisions were made to increase the opportunities for participation by small farmers and to give greater administrative responsibility to farmer committees. Here was recognition of two implicit program objectives; maintenance of the small family farm and local program administration. Both are still important in the program today. Their importance is shown by congressional maintenance of the small payment increase and insistence that program changes must come from the states and local committees.

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[3]H. O. Wallace, Report of the Secretary of Agriculture, 1940 (Washington: U.S. Government Printing Office, 1940), p. 30.

By 1941 emphasis had again shifted. This time the major objective was production for defense with some consideration for conservation; emphasis on production continued throughout most of the war. Baker and others describe the situation.

> By changing the definitions of soil-depleting and soil-conserving crops, the Department was able to continue to make some agricultural conservation payments to farmers throughout the war period. For example, peanuts which were hogged off were classified as a soil-building crop, cotton of staple length of more than 1-1/2 inches was not classified as cotton, and wheat and cotton acreage allotments planted to war crops were considered to have been planted to wheat and cotton for purposes of determining agricultural adjustment and soil conservation payments. Thus, the adjustment machinery of the depressed thirties was able to promote increased production to meet the new conditions of the forties.[4]

The production objective has since been dropped, but many of the production aspects still remain in effect. Consequently, the question arises as to whether the program has been changed enough to fulfill the changed objectives. Most of the ACP practices might be classified as practices that increase production, but the important question is what kind of production do they encourage; is it production of legumes or grasses that conserve the soil and shift land out of crop

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[4]G. L. Baker, W. D. Rasmussen, Vivian Wiser, and J. M. Porter, Century of Service: The First 100 Years of the United States Department of Agriculture (Washington: U.S. Government Printing Office, 1963), p. 305.

production or is it production of surplus crops,[5] such as wheat and cotton?

Conservation Becomes Major Objective

In 1944 a "rider" was attached to the appropriations bill that restricted ACP to a program of 300 million dollars based solely on soil and water conservation practices. To quote Knapp:

> The effect of the provision was twofold. From the standpoint of program administration; authority to plan the necessary size and scope of the ACP was shifted from the Secretary of Agriculture to the Congress. At the same time, the basic objectives of the ACP were reoriented from a combination of acreage control and conservation to conservation alone. As corollary to these changes, a specific prohibition against the use of appropriations funds for incentive payments [to increase production] was included in the bill.[6]

Since this change, payments could no longer be earned by meeting set acreage allotments and conservation became the major explicit program objective.

With the limitations on size and scope of ACP, came some changes in its administration. The farmer committeemen were given greater responsibility in selecting practices that might qualify for payments as well as in determining the amount each farmer could earn. These operational changes

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[5]Surplus crops are defined here as those involved in federal support programs.

[6]Knapp, op. cit., p. 265.

were followed by a reorientation of the soil conservation effort towards an emphasis upon long-range or "permanent" practices for checking erosion and restoring soil fertility.[7]

In the 1946 program, conservation was defined so as to include: (1) maintaining or increasing soil fertility, (2) controlling or preventing erosion, (3) making better farm use of water and (4) improving or maintaining range and pasture. ACP was further restricted in 1947 to conservation practices that would not be applied without assistance. Assistance was not to continue on conservation practices that had become established.[8] Throughout this post war period, conservation, or more specifically soil conservation, was considered a means "to increase production immediately, and while doing so build renewed strength in the land so as to be able to meet future needs."[9]

To accelerate the program of soil and water conservation, new program provisions were initiated during the late forties. The Conservation Materials and Services (CMS)

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[7]U.S.D.A., Report of the Chief of the Agricultural Adjustment Agency (Washington: Government Printing Office, 1944), p. 8.

[8]C. P. Anderson, Report of the Secretary of Agriculture, 1947 (Washington: Government Printing Office, 1947), p. 71.

[9]C. F. Brannan, Report of the Secretary of Agriculture, 1951 (Washington: Government Printing Office, 1951), p. 15.

procedure was set up to further the use of permanent practices. Under this procedure county committees would take over many of the administrative details involved in obtaining and applying certain conservation practices. This made the use and application of practices more convenient to both the farmer and the local contractors.

In 1949 ACP initiated an experimental program called the "Farmer and Rancher Conservation Program." Here again emphasis was on "permanent" practices but they were included in a total farm plan much like those of the Soil Conservation Service.[10] This was apparently part of ACP's attempted expansion plan of the late forties and early fifties in which they tried to take over all aspects of the USDA conservation program. During this period ACP was the only reason for the existence of the farmer committees, who, consequently, tried to expand their responsibilities.

Two actions by the Agricultural Appropriations subcommittees helped stop this expansion program. One had only a temporary impact while the other is still in effect today. The temporary act occurred in 1948 when the Republican Congress approved a cut in ACP's appropriations; however, it only lasted for one year. The permanent change came in the

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[10]C. F. Brannan, Report of the Secretary of Agriculture, 1949, p. 18.

1951 appropriations bill that authorized a 5 percent transfer of funds from ACP to SCS. This transfer was negotiable and was for technical services provided by SCS on ACP practices. During the first year of the transfer provision, both agencies dragged their feet and few agreements were negotiated.

But in February of 1951, the Secretary of Agriculture finally acted; he issued Memorandum No. 1278 that directed the state farmer committees to take the initiative in coordinating activities between federal agencies and in negotiating agreements with SCS. The SCS state conservationist was given the responsibility for all technical phases of the permanent soil-conservation practices undertaken by SCS and ACP with the exception of forestry work. The Forest Service was directed to assume similar responsibility for forestry practices. The technical phases of ACP were transferred wherever possible to SCS and the Forest Service. ACP's attempt to assume the technical services of SCS was blocked and some of the duplication of services was removed.

Memorandum No. 1278 also gave futher emphasis to permanent as compared to temporary conservation practices. "Major emphasis was on practices of a lasting nature and those requiring financial assistance to assure the desired

results."[11] And during the 1951 and 1952 programs grassland agriculture was given special emphasis.

New Administration

The Republican Administration took over in 1953 and in 1954 introduced the "package practice" approach, which was the first real change in ACP policy since 1946. Instead of paying for that part of the conservation practice completed, the cost-share was only offered on the basis of a complete job. In other words, a farmer could no longer receive payment for just applying lime or fertilizers; he must complete some conservation practices in conjunction with the application of lime or fertilizers, such as planting grass or legumes, in order to obtain payments.

The 1954 handbook spelled out for the first time the specific principles under which ACP was to be administered: (1) to confine the conservation practices to those most needed to achieve the maximum conservation benefit, (2) to encourage those practices with the most enduring benefits, (3) to limit cost-sharing to those practices that it is believed would not be carried out to the extent needed without assistance, (4) to cost-share the minimum required to result in substantially increased performance of needed

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[11] C. F. Brannan, Report of the Secretary of Agriculture, 1952, pp. 15-17.

practices, and finally (5) the farmers were given the responsibility for the upkeep and maintenance of the practices.[12] These program principles were to direct the program towards achieving additional conservation.

To help achieve the basic principles set forth in the 1954 Agricultural Conservation Program, the USDA attempted to drop or modify a large number of practices. The practices to have been eliminated included those considered as recurring practices.[13] While a large list of recurring practices were excluded from the tentative list of ACP practices for

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[12] E. T. Benson, Report of the Secretary of Agriculture, 1958, pp. 31-32.

[13] The practices not included in the tentative list of practices for 1954 were: minerals used in connection with "recurring" practices, applying fertilizer to coffee groves, green manure, cover crops, contour farming, cross-slope farming, contour listing, furrowing, pitting, deep plowing sandy cropland, stubble mulch, leaving stalks or stubble, vegetative barriers planted to control erosion, mulching low land to control wind erosion, deep plowing irrigated cropland, controlled application of irrigation water, reseeding range land by deferred grazing, pasture reseeding, grazing-land management, small-pasture management, fencing to protect woodland and permanent cover or pasture, supplemental-water storage development for livestock water, stock trails, fireguards to protect range land, mowing weeds on pasture and range, field strip-cropping, protecting summer fallow, subsoiling, increasing acreages of legumes and grass for seed, maintaining a stand of trees in windbreaks, firebreaks constructed to protect woodland, weed control by tillage, weed control by chemicals, mulching materials applied to coffee trees, applying sugar-mill refuse, applying shredded pineapple to pineapple fields, organic manuring, nitrogen, seeding hay crops, maintaining a permanent cover in orchards, and removal of brush prior to ditching. U.S. Congress, Senate, Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1954, 83rd Congress, 1st Session, p. 636.

1954, many of them reappeared on the final list due to congressional pressures. Yet many cost-share rates were reduced from a maximum of 70 percent to 50 percent, which was set as maximum for all practices. Other practices, like fertilizer and lime applications, were not dropped but were restricted to use in the improvement or establishment of vegetative cover. Hence, some of the production and recurring practices were dropped while others restricted. Even so, this was the last major reduction in ACP practices and cost-share rates.

In conjunction with these changes, the Secretary of Agriculture asked for and received a reduction in ACP appropriations with the help of the Republican Congress. This reduction only lasted for a year, as in 1955 the Secretary asked for and obtained an increase in appropriations to help farmers make temporary and long-term land-use adjustments.[14] The 1954 appropriations reduction became the last, despite attempts by the Bureau of the Budget and subsequent Presidents to cut ACP's funds.

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[14] Senate, Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1955, 83rd Congress, 2nd Session, p. 706.

Only minor changes in ACP were attempted from 1954 to 1958, while permanent or enduring practices[15] were emphasized and practices considered normal farm management practices were deemphasized. Cost-share rates higher than 50 percent were authorized in 1956 for practices with long-lasting conservation benefits that were remote to the farmer or rancher.[16] Since many of the practices considered farming practices could not be dropped, increasing the cost-share rates on other practices was another way to achieve the desired emphasis. The 1957 program offered payments for measures that when applied near the end of a practice's usual life span could materially extend its life. Farmer committees were also authorized to make payments to replace practices that had served their life span. This approach seemed to indicate that for these practices either the demonstration effect was quite limited or the farmer did not capture many of their benefits. Presumably, if the demonstration

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[15]The permanent or enduring practices were defined by Mr. Williams as mechanical and vegetative practices whose benefit will continue through a period of several years. They must be needed for conservation but not likely to be initiated without assistance. They must be essential to the public welfare but not returning sufficient short term economic benefits to the farmer to provide the necessary encouragement to him to install them. Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1954, 83rd Congress, 1st Session, p. 662.

[16]Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1957, 84th Congress, 2nd Session, p. 277.

effect worked and the returns exceeded practice costs, the farmer would not need any assistance the second time.

During the late fifties, the Administration finally realized surplus agricultural commodities were something other than a temporary problem. In 1958 ACP began to be stressed as a program with a twofold value of conservation and surplus control through the encouragement of sound land-use adjustments away from intensive crop production.[17] To fit the new twofold objective and to stay within the Budget Bureau's proposed appropriation of 125 million dollars, a number of practices were tentatively dropped and others modified. These practices included those considered as normal farming practices, reoccurring practices or practices that brought new land into production.[18] The new

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[17] E. T. Benson, Report of the Secretary of Agriculture, 1958, p. 27.

[18] "It is proposed to omit practices A-3, B-4, B-8, B-9, C-3, C-8, C-11, C-14, and D-3 from the 1959 national bulletin.

"It is proposed that no cost-sharing be authorized for land-clearing operations under practices A-2; to omit rock phosphate from list of eligible materials under A-4; to limit cost-sharing for practices C-9, C-10, C-12, and C-13 to land which was devoted to production of cultivated crops or crops normally seeded for hay or pasture in areas during at least 3 of last 5 years.

"It is proposed to reduce maximum rate of cost-sharing for practices B-3, C-9, C-10, C-12, C-13, C-15, E-1, E-2, and E-3 from 50 percent of average cost of performance to 35 percent. Similar reduction proposed for eligible materials applied under practice A-4, in connection with annual and rotation vegetative cover." Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1959, 85th Congress, 2nd Session, p. 548.

restrictions ranged from a 35 percent maximum cost-share rate on certain practices to a 3 out of 5 year cropping requirement for drainage practices. This latter restriction was an attempt to remove some of the obvious production increasing aspects of ACP. As might be expected, these changes never appeared in the final list of practices due to the combined efforts of both agricultural appropriation subcommittees and other supporters of the program.

The last attempt to significantly change ACP practices came in 1960 and was reviewed in the 1961 appropriation hearings. These changes were aimed at removing some of the production increasing aspects of ACP as well as stopping practices with low returns compared to costs. An attempt was also made to eliminate normal farming practices or those using water rather than conserving it.[19]

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[19]The proposed changes included the following: First to "discontinue the offer of cost-sharing for land clearing, removal of stone walls and hedgerows, and installation of fences, as components of approved practices. . . . The cost of these measures is often high in comparison with the conservation benefits resulting from their application." Second, to limit drainage and irrigation practices to land that has been used for agricultural production or has been under irrigation for at least 4 out of the last 5 years instead of the present 2 out of 5 years. "This change would emphasize the ACP policy of not bringing more land into agricultural production, and would also prevent the possibility of a farmer installing a poor irrigation system at his own expense with the exception of getting cost-sharing help to reorganize it soon after installation." Third, "to discontinue the offer of cost-sharing for rock phosphate applied on normal seedings of vegetative cover in crop rotations." Fourth, "to require more careful consideration of the

Such efforts to alter practices appeared as an attempt to move ACP closer to fulfilling its twofold objectives of soil conservation and land-use adjustment. The appropriation subcommittees, however, blocked these attempts that ran contrary to their objectives. As a result of these attempted changes, provisions were written in the 1959, 1960, 1961 and 1962 appropriation bills that specifically prohibited any changes in eligibility, cost-share rates or practices.

These restrictions along with previous restrictions meant that the Secretary of Agriculture no longer had any authority to change ACP; all changes had to come from the state and local level. Practices could be added to the national bulletin, but none could be dropped or restricted. ACP that was once formulated completely by the Secretary of

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amount of fertilizer needed to establish green manure and cover crops and to approve cost-sharing only for the minimum quantity of fertilizer needed to establish the cover." Fifth, to "require - as a condition of eligibility for cost-sharing for the application of liming materials, gypsum, and other sulfur-bearing materials - that eligible grasses and legumes occupy the land for at least two growing seasons." Sixth, to "approve cost-sharing for wells for livestock water and cost-sharing for deferred grazing of rangeland, only after receiving individual county or area recommendations and justifications." The change in cost-sharing for wells is intended to encourage construction of ponds for livestock water rather than wells. Deferred grazing tends to be continued longer than needed, thus restriction of its use is needed. Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1961, 86th Congress, 2nd Session, pp. 250-51.

Agriculture was now formulated almost entirely at the state and local level.

The New Democratic Administration

After the change to the Democratic Administration in 1961, no major attempts were made by the USDA to alter ACP, although a few new practices were incorporated. Wildlife practices were introduced into the 1962 program as the administration broadened its conservation objectives and by 1965 the wildlife practices were expanded from three to four. These practices appear to facilitate small land-use adjustments and possibly use funds that might otherwise be spent for practices increasing present crop production.

ACP continued to stress practices with enduring benefits and in 1964 special preference was given to those helping to establish permanent vegetative cover. Emphasis continued on the program's conservation aspects, although practices remained that increased present crop production and provided only minimal conservation benefits. These latter practices remained at least partially due to the Appropriation Subcommittees' refusal to approve any changes in the program that might restrict ACP. The administration could only change by stressing certain practices or adding new ones.

The Democratic administration has continued the emphasis on conservation and land-use adjustment. In the 1965 appropriation hearings, the Secretary of Agriculture accentuated the long-term land-use adjustment aspects of ACP.

> I would say that I believe that the ACP program, which is increasingly directing itself to permanent land-use adjustments, will, as it builds into this basic, long-term land-use adjustment increasingly prove itself as a critical and important program.[20]

Land-use adjustment may prove to be the objective that receives major explicit emphasis in the future. But, the broadened conservation objective should remain important with all its public appeal.

Summary

There is a similarity between the program objectives of the thirties and those of the sixties. The major emphasis is now on conservation and land-use adjustment, while in the late thirties it was on crop adjustment and soil conservation. The present surpluses of agricultural commodities are much like those of the late thirties; the objective of land-use adjustment is directed at this problem as was crop adjustment. Soil conservation of the thirties included conservation of soil and water, while the objectives of today include

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[20]Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1965, 88th Congress, 2nd Session, p. 187.

soil, water, forest and wildlife conservation. Since World War II, when production increasing objectives received major emphasis, conservation with enduring benefits has maintained its top billing.

ACP's objectives have changed very little since about 1946, although the policy used to fulfill them was changed in 1954. Consequently, an eighteen year period (1946-63) is available to compare its performance in fulfilling these objectives. The question that now needs an answer is whether or not the program has changed enough to meet the changing conservation needs. This and other questions will be considered in Chapters VI and VII that analyze ACP over the eighteen year period.

CHAPTER IV

NATIONAL ACP POLICY FORMULATION

In addition to the program objectives of conservation and land-use adjustment, other less explicit objectives influence ACP's operation. To gain an understanding of these other objectives and the manner in which they enter, the program requires a discussion of ACP policy formulation. This chapter will consider the various groups that influence ACP policy at the national level and point out the objectives they introduce.

The first section of this chapter will discuss the three main policy making bodies that affect ACP policy. The second examines the objectives of the key individuals and agencies that form ACP policy. The last section evaluates the consequences of such a policy process and discusses the possibilities for future improvement of ACP.

ACP Policy Process

ACP policy has stemmed mainly from three sources: (1) the appropriations, (2) the legislative amending of the authorizing statute, and (3) the program administration.

The key policy making bodies in the first two are the congressional committees, while in the third it is the USDA. Knapp has shown that in the appropriations the subcommittees on agricultural appropriations, particularly the House Subcommittee, have been the important policy making bodies.[1] In legislation, the committees on agriculture have been the crucial factors. Talbot has pointed out the importance of the committees on agriculture in obtaining congressional approval of legislation.[2]

Although the Congress has been (and still is) the major policy maker, the administration of ACP provides important opportunities for making policy changes. Policy decisions made by the ACP administration, however, are subject to Congressional review, particularly by the House Subcommittee on Agricultural Appropriations. Many times these subcommittees have reversed USDA policy decisions, especially if the change in policy is contrary to their objectives.

The most important of the three policy making bodies are the subcommittees on agricultural appropriations; their importance during the forties has been well documented, and

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[1]Knapp, op. cit., pp. 257-81.

[2]Ross R. Talbot, "Farm Legislation in the 86th Congress," Journal of Farm Economics, Vol. 43 (August 1961), pp. 582-606.

during the fifties and early sixties it has not lessened.[3] Hathaway shows how these subcommittees make the key decisions in both houses of Congress.[4] He points out that the Senate Subcommittee decisions are not likely to be reversed by the full Committee on Appropriations because its membership contains the chairman and five of the nine leading Democrats on the full committee. The House Subcommittee's decisions have rarely, if ever, been reversed by the full committee. This is probably due to the composition of the subcommittee and the strength of its chairman, Mr. Whitten.[5]

The composition of the subcommittees on agricultural appropriations has changed very little since the fifties (see Tables 1 and 2). Only in 1953 and 1954, when the Republicans controlled the Congress, did the make-up of the subcommittees change significantly. It is important to note that a

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[3]"In the early years, most of the policy changes, particularly with respect to acreage allotments for basic commodities, were made as amendments to the authorizing statute. Between 1940 and 1950, however, the Congress relied in large part upon the appropriations process for reviewing the operation and policies of ACP. In all, nine basic changes in agricultural conservation policy were made by way of appropriations legislation during this period. In contrast with relative routine changes made by amending basic legislation after 1940; the issues which were resolved in the appropriations process were in large part controversial in nature." Knapp, op. cit., p. 259.

[4]Hathaway, op. cit., pp. 191-92.

[5]Ibid., pp. 195-96.

Table 1. Composition of the Subcommittee on Agriculture and Related Agencies of the Senate Committee on Appropriations

	Region[1] and Party											
	South		East		West		Midwest		Plains		Total	
Year	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.
1964	5*	..	..	1	1	..	2	..	2	3	10	4
1963	5*	..	..	1	1	..	1	..	2	3	9	4
1962	5*	..	..	1	1	1	1	..	1	3	8	5
1961	5*	..	..	..	1	1	1	..	1	4	8	5
1960	5*	..	1	..	1	1	..	..	1	3	8	4
1959	5*	..	1	..	1	1	..	..	1	3	8	4
1958	5*	..	..	1	1	1	..	1	..	2	6	5
1957	5*	..	..	..	1	1	..	1	..	2	6	4
1956	5*	..	..	..	1	1	..	2	..	2	6	5
1955	5*	..	..	..	1	1	..	2	..	2	6	5
1954	2	..	..	1	2	1	..	3	1	2*	5	7
1953	2	..	..	1	2	1	..	3	1	2*	5	7
1952	2*	..	..	..	2	1	..	2	2	1	6	4
1951	2*	..	..	..	2	1	..	1	2	2	6	4
1950	4*	..	..	..	2	1	..	1	2	3	8	5

*Chairman was from this region.

[1]South--Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Virginia, Kentucky, West Virginia; East--Maryland, Delaware, Connecticut, New York, New Jersey, Pennsylvania, Rhode Island, Vermont, New Hampshire, Maine, Massachusetts; West--California, Nevada, Washington, Oregon, Utah, Arizona, Hawaii, Alaska, Idaho; Midwest--Illinois, Iowa, Indiana, Michigan, Missouri, Minnesota, Ohio, Wisconsin; Plains--South Dakota, North Dakota, Kansas, New Mexico, Colorado, Wyoming, Montana, Nebraska.

Source: Congressional Index (Washington: Commerce Clearing House Inc., 1949-1964).

Table 2. Composition of the Subcommittee on Agriculture and Related Agencies of the House Committee on Appropriations

	Region[1] and Party											
	South		East		West		Midwest		Plains		Total	
Year	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.
1964	2*	..	1	..	..	1	..	1	..	..	3	2
1963	2*	..	1	..	..	1	..	1	..	..	3	2
1962	3*	..	1	..	..	1	..	2	..	..	4	3
1961	3*	..	1	..	..	1	..	2	..	..	4	3
1960	2*	..	1	..	..	1	1	2	..	..	4	3
1959	2*	..	1	..	..	1	1	2	..	..	4	3
1958	2*	..	1	..	..	1	1	2	..	..	4	3
1957	2*	..	..	..	..	1	2	2	..	..	4	3
1956	3*	..	..	..	..	1	1	2	..	..	4	3
1955	3*	..	..	..	..	1	1	2	..	..	4	3
1954	2	..	..	..	..	2	1	2*	..	..	3	4
1953	2	..	..	..	..	2	1	2*	..	..	3	4
1952	3*	..	..	..	..	1	..	1	..	..	3	2
1951	3*	..	..	..	..	1	..	1	..	..	3	2
1950	2*	..	..	..	..	1	1	1	..	..	3	2

*Chairman was from this region.

[1]Same regional divisions as in Table 1 (see Table 1).

Source: See Table 1.

sizeable reduction in appropriations was accomplished during the 1953-54 period.[6] Moreover, it was at this time that the only major change in the list of agricultural conservation practices was made.

With this brief background on the three policy sources, we return to a more detailed discussion of each. First, the House Subcommittee on Agricultural Appropriations has been chaired by Mr. Whitten since 1949 with the exception of 1953-54. There has been at least one other southern Congressman on the five to seven man subcommittee. On the larger Senate subcommittee of ten to fourteen, the southern Congressmen have even stronger representation. The chairman has been from the South since 1949 except for 1953-54 and since 1955, five leading southern Democrats have been on the subcommittee.

With this strong southern influence the Subcommittees on Agricultural Appropriations have affected ACP policy by writing provisions into the appropriations legislation and

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[6]"Thus the annual budget appropriations act does two things: it makes appropriations for ACP which were authorized in the previous session, and it authorizes appropriations to be made the following session for the same program.

"This means that any serious reduction in the ACP program has to be made a year in advance; any given session of Congress is apparently stopped from reducing the appropriations which is not merely authorized but apparently bound to make." Knapp, op. cit., p. 163.

by giving or not giving support to policies of the USDA. For example, they have written the following restrictions: (1) a limit on the administrative funds, (2) a 5 percent fund transfer to the Soil Conservation Service for technical work performed for ACP and (3) a provision not allowing any funds for salaries of information personnel. The subcommittees' support of USDA policies has also been important in forming ACP policies. For example, the Secretary of Agriculture's reorganization and consolidation of SCS and ACP in 1951 would not have been possible without the support of the House Subcommittee on Agricultural Appropriations.[7] In 1958 the reverse occurred; the appropriations committee vetoed a proposed major overhauling of agricultural conservation practices.[8] This clearly shows how the subcommittees can

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[7]"Reorganization was accomplished, nevertheless, in 1951 through a combination of the sustained and courageous efforts of Secretary Brannan and the vigorous persistence of the House Committee on Appropriations (and especially of its subcommittee on agriculture). . . . It could hardly have been done without the willing cooperation of the Secretary; yet on the evidence of recent history, the Secretary would would have been unable to act without the backing and insistence of the House Appropriations Committee members" particularly those on the Subcommittee on Agricultural Appropriations. Ibid., pp. 161-62.

[8]"Assistant Secretary of Agriculture Ervin L. Peterson wrote a confidential memo to officials directly in charge of ACP. Peterson said that the 1958 program should drop nine practices that have only a temporary conservation effect - and which step up farm production at the same time we're battling to reduce surpluses." The memo somehow got to the Senate-House Conference Committee that was ironing out the USDA appropriations. "Committee members rewrote their report

either assist or block policy changes initiated by the USDA. The Subcommittees on Agricultural Appropriations hold the power to initiate, review, and approve or disapprove ACP policy.

Second, as was pointed out earlier, since 1940 few basic changes have been initiated through the legislative process of amending the authorizing statutes. One of the important reasons for this is the change in composition of the Congress and the lack of any substantial change in composition of the committees on agriculture. The "farm bloc" is no longer of prime importance in deciding agricultural policy, chiefly because, proportionately, farm population has declined sharply.[9] Since the original large number of Congressmen representing only rural interests have been supplanted by Congressmen with strong urban interests and support, it has become increasingly difficult to get changes through Congress that will increase payments to farmers. On the other hand, southern and other Congressmen representing predominately rural interests, still control agricultural

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to include stern warnings against the ACP changes. Further, it charged the USDA to bring any proposed changes for 1959 before the House and Senate Agricultural Appropriations Subcommittees next year." "A Confidential Memo," Farm Journal, Vol. 81 (August 1957), p. 10.

[9]Hathaway, op. cit., p. 187-88.

committees (see Tables 3 and 4). The result is a stalemate, even with ACP, as appropriations and expenditures have changed very little in the past decade.

Because administrative policy changes are subject to review by Congress, the administration has great difficulty making changes in ACP that are contrary to the objectives of the appropriations subcommittees. The administration is even prevented by Congressional stipulation from changing the proportioning of funds between states by more than 15 percent per year. Although the administration seldom makes major changes without the support of the subcommittees, it does, however, make important minor changes. For example, according to the Secretary of Agriculture's Report of 1962,

> State, county and community committeemen were asked to encourage those farmers, who had not been doing conservation work, to undertake a needed conservation project in 1962, and to acquaint them with the publicly provided resources available.[10]

This is the kind of administrative decisions made by the USDA that affect ACP policy and is usually not questioned by the appropriation subcommittees.

The state and county committees which administer programs on the state and local levels are another important part of the administrative process. These committees are

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[10]Orville L. Freeman, Report of the Secretary of Agriculture, 1962 (Washington: Government Printing Office, 1962), pp. 16-17.

Table 3. Composition of the Senate Committee on Agriculture and Forestry

	Region[1] and Party											
	South		East		West		Midwest		Plains		Total	
Years	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.
1963-1964	8*	1	..	2	1	..	1	1	1	2	11	6
1961-1962	6*	1	..	2	1	..	4	1	..	2	11	6
1959-1960	7*	1	..	1	..	..	4	1	..	3	11	6
1957-1958	6*	..	..	2	..	..	2	2	..	3	8	7
1955-1956	7*	..	..	2	..	..	1	2	..	3	8	7
1953-1954	5	..	..	2*	..	1	1	2	1	3	7	8
1951-1952	5*	..	..	1	..	..	1	3	1	2	7	6
1949-1950	5*	..	..	1	..	..	2	3	1	1	8	5

*Chairman was from this region.

[1]Same regional divisions as in Table 1 (see Table 1).

Source: See Table 1.

Table 4. Composition of the House Committee on Agriculture

	Region[1] and Party											
	South		East		West		Midwest		Plains		Total	
Years	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.	Dem.	Rep.
1963-1964	12*	1	1	2	5	2	3	6	..	3	21	14
1961-1962	14*	1	..	2	3	2	3	5	1	4	21	14
1959-1960	14*	1	..	3	1	3	5	3	2	2	22	12
1957-1958	13*	1	1	3	1	2	4	5	..	4	19	15
1955-1956	13*	1	1	4	1	1	4	5	..	4	19	15
1953-1954	12	3	..	4	..	1	2	4	..	4*	14	16
1951-1952	12*	1	1	4	1	1	3	4	..	3	17	13
1949-1950	10*	1	2	2	2	1	2	4	1	2	17	10

*Chairman was from this region.

[1]Same regional divisions as in Table 1 (see Table 1).

Source: See Table 1.

not only instrumental in deciding what conservation practices to cost-share with farmers and how much of the cost to share, but they also determine the allocation of funds among counties and farms. Once the funds have been allocated, it is up to the state and county committees to allocate the funds within the state and the counties. The importance of selecting conservation practices cannot be over emphasized. Mr. Peterson, Assistant Secretary of Agriculture, has explained the general procedure.

> Each year . . . , we ask county committees and the State committees to review their program and make their recommendations to the Department here in Washington as to any changes they think should be incorporated in the program.
>
> State recommendations are reviewed here in Washington. A national program is then put together which becomes the authorized program for that particular year. That goes to the States, and from whatever is in that bulletin the States then make their program.
>
> The State program goes to the counties, and the counties then make their program within the State framework.[11]

The importance of suggestions from the state and county committees can only be appreciated when one realizes that the subcommittees on appropriations place a high value on state and local program administration. These subcommittees stress the fact that cuts or other changes in ACP should

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[11]Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1959, 85th Congress, 2nd Session, p. 545.

come from the states or at least be approved by the states. In fact, at times the subcommittees have explicitly recommended that the department "get suggestions from the states to be predicted on the recommendations of various county committees."[12]

Objectives of the Policy Making Bodies

With an understanding of the importance of the various committees forming ACP policy, let us examine their objectives. Significant factors, of course, are the objectives of key congressmen on the appropriations subcommittee and the objectives of the Administration.

The key congressmen on these committees are the southern congressmen and congressmen representing large rural populations, particularly those who are committee chairmen. Mr. Whitten, the chairman of the House Subcommittee on Agricultural Appropriations, is clearly a key congressman. In fact, it has been said that in agriculture policy his power is second to none.[13]

Mr. Whitten has been a strong supporter of ACP and has fought to prevent reduction in the program. He realizes that ACP funds are not used optimumally, but feels that this

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[12] Ibid., p. 546.

[13] Hathaway, op. cit., p. 195.

is necessary in order to get the programs through Congress. A program of conservation payments made just to the southern states would not be passed by Congress. Consequently, Whitten has worked hard to maintain ACP and the southern states' share of it.[14]

Senator Russell, who has been chairman of the Senate Subcommittee on Agricultural Appropriations; Senator Holland, now chairman; and Senator Ellender, chairman of the Senate Committee on Agriculture and Forestry, are all from the South and have been strong supporters of ACP. The chairman of the House Committee on Agriculture, Cooley, is also from the South and a supporter of ACP. Senators Russell and Ellender have both made statements praising ACP's worth to the people of the United States and indicating that the proposed cuts in appropriations will kill this wonderful program.[15] These southern congressmen still represent large

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[14]"If we were to write into this bill that it applied only to the needy or worn-out sections of the United States (the South), you could not get enough votes in the Congress to pass it, judging from my experiences in the past. Of course, when it has broad application, then it is allocated to sections which do not have any special need for it on a comparative basis. But I do not know any other way to get around that." U.S. Congress, House, Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations, 1954, 83rd Congress, 1st Session, p. 1843.

[15]Senator Russell stated the following: "This soil conservation program (ACP) in my judgment has been one of the most beneficial things that has ever happened to the American people. For a number of years we appropriated $500 million a year, then we got involved in a war in 1941 or 1942, and we were demanding that farmers plant everything to

rural interests who make use of ACP. Over 40 percent of the farmland in these senators' states is under ACP while in Cooley's home state of North Carolina over 61 percent of the farmland was under ACP in 1961.

Senator Carlson of Kansas summed up the beliefs of many of the strong congressional supporters of ACP when he said:

> The entire public benefits from conservation work, and they should bear a part of the cost. Conservation work induces expenditures that create greater markets for machinery; fuel, lubricants, seeds, minerals; and many other supplies.[16]

Not only do the congressmen think of ACP in terms of what it will do for conservation, they also consider what it will do for businesses dealing with farmers. They consider it both a stimulus to conservation and an income support. Mr. Whitten

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cultivated crops, and we reduced the program very drastically, but nobody heretofore proposed a cut as low as $110 million. I frankly doubt whether we can provide the incentive that is necessary to have a real soil-conservation program with that small amount of money."

Senator Ellender commented that: "it is my considered judgment that the best program ever started was this soil-conservation program (ACP). It has been a savior to our country, and I am very much disappointed that the department under the new administration is curtailing it to such an extent that in my opinion it will defeat it. Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1954, 83rd Congress, 1st Session, pp. 35, 634.

[16]Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1964, 88th Congress, 1st Session, p. 271.

views it as both an income support and a source of capital for resource development on southern farms.[17] He appears to say that farmers need an income supplement so they can undertake the practices necessary for the upkeep of their farms; otherwise, the farmers will allow their resources to deplete.

Some southern congressmen may also feel that their section of the country should at least have ACP payments to help develop their resources, since the 17 western states already receive funds from the Bureau of Reclamation. The western states can use the Bureau funds plus ACP funds to develop their resources while the rest of the country gets only ACP funds. This may be one reason why ACP does not receive strong support from western states.

Southern congressmen on the appropriations subcommittees are also purported to be strong states' rights men who try to limit federal control over the programs. As already has been shown, they want states to have as much

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[17]"So to say that we have learned our lesson in the use of fertilizer will not apply when prices fall. It is my view that we have had a free market for agriculture through the years. And much of this declining of soil, from my observation in at least 3 or 4 states as a youngster growing up, comes from the fact that the average farmer did not have enough, after he paid his taxes and did reasonably well by his family, to keep his house painted and to keep the farm improved. Of course there are exceptions. Those who are close to the city markets, or those farmers with exceptional ability, or those farmers who might have had a little extra capital, are the exception." House Committee on Appropriations, op. cit., p. 1847.

voice as possible in administering ACP. The objective of limiting federal control is indicated by the limitations on ACP administrative funds which were written into the appropriation bills from 1945 to 1961.

Some congressmen also favor ACP because they think it helps small family farms. They feel that such farms receive more benefits from ACP than they do from other farm conservation programs.[18] The strong support for the small family farm is exemplified in the provision for bonus payments to farmers when their payments are less than 200 dollars. The Department of Agriculture has tried to eliminate this provision, which costs 10 million dollars a year, but Congress has maintained it.

Congressional support for ACP has not been wholly southern, Republican congressmen from the plains and eastern states have also supported it. Senator Aiken from Vermont, the leading Republican on the Senate Committee on Agriculture

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[18] Dworohak: "Mr. Secretary, will this proposed reduction have an adverse effect upon the small family-sized farm in view of the fact that most of the benefits from your farm-conservation program go to the larger farmers? . . .

"That is the point of the question, to determine whether the cutback in ACP conservation practices will discriminate against the small operator, this family-sized farm operator?" Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1959, 85th Congress, 2nd Session, p. 660.

and Forestry and an ex officio member of the Appropriations Subcommittee, is a strong supporter of ACP. It is easy to see why, since 65 percent of the farmland in Vermont was under ACP agreements in 1961. Strong support can also be expected from Senator Young of North Dakota and Senator Mundt of South Dakota, the two leading Republicans on the Senate Subcommittee on Appropriations. With 75 percent of North Dakota's and 47 percent of South Dakota's farmland under ACP in 1961, it seems highly unlikely that Senators Young and Mundt would support a cut in ACP.

Against this strong support for ACP, the USDA tries to maximize the objective of conservation and land-use adjustment. The USDA has attempted to obtain maximum returns from its several conservation programs, given a set budgeted amount of money for conservation. In the past eight to ten years the USDA has felt that ACP could be cut anywhere from 100 million to 150 million dollars and the funds put to better use in other programs.[19] This cut is

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[19]Mr. Peterson stated: "It seems to me that Congress and we in the Department of Agriculture are in about this position: We have a certain estimated maximum amount of money that can be devoted to all conservation activities, whether they be in the Forest Service or soil bank or SCS or ACP or what have you, and it is a matter of judgment as to how those funds are distributed.

"Anticipating the kind of funds that would be available to us to distribute in the ensuing budget, it seemed to us we might still keep a pretty sound ACP program and make a reduction, although this is a fairly sharp reduction." Ibid., p. 543.

partially due to an attempt to use budgeted conservation funds on those programs complementary to the objective of reducing present crop production.

Even though the USDA officials realize that ACP adds to crop production, the main impetus for a cut in appropriations has not always come from the USDA. The Bureau of the Budget with the backing of the President has been the main force trying to cut ACP funds. The USDA would just as soon have enough funds to maintain all the conservation programs, but the Presidents since 1947 have shown a preference to use the funds elsewhere as they have tried to balance the budget.

The conflict between the Bureau of the Budget and the USDA is carried over into the appropriations process. The USDA officials let the appropriations subcommittees know that the cut in the ACP budget was proposed by the Bureau of the Budget.[20] The support of the USDA is behind the appropriations subcommittees as they maintain ACP's appropriations.

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[20] "Senator Russell: They made a case here for about $400 million but they are defending the budget estimate for $150 million. It is a rather ludicrous situation. How much did the Department request for the 1963 program?"

"Secretary Freeman: $250 million." Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1963, 87th Congress, 2nd Session, p. 686.

"Senator Holland, I might state to you that when the Department came before us and was questioned by the committee it appeared they had requested $250 million, and it was the Budget Bureau that reduced it to $150 million." Senate Subcommittee on Appropriations, Hearings, Department of Agriculture Appropriations for 1964, 88th Congress, 1st Session, p. 1205.

Prospects for the Future

Given the above ACP policy process and the objectives introduced by these important congressmen, it seems reasonable to conclude that it will be difficult in the future to improve or even change the Agricultural Conservation Program at the federal level. No major changes in ACP policy or appropriations can be expected unless there is a substantial change in the distribution of power in Congress or a change in the objectives held by certain congressmen, neither of which seems likely.[21]

The important positions held by the appropriations subcommittees and the committees on agriculture in the formulation of ACP policy prevent any changes in ACP that would reduce payments. These committees cannot be expected to approve any changes in ACP that are contrary to the objectives they hold for ACP, which include income support, flexibility in the state program administration, maintenance of the family farm and rural resource development. Counter balancing this strong support for ACP are the congressmen

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[21]"As long as farmers have permanent legislation on the books which is preferable to the alternatives upon which nonfarm groups will agree, the farm groups will be able to maintain the status quo in policy for sometime. . . . To bring about a major change in policy will require either a significant change in economic conditions or a complete change in the distribution of political power of the relevant decision-making groups in Congress." Hathaway, op. cit., p. 198.

and the President who represent strong urban interests. This situation has led to an Agricultural Conservation Program that has been changed very little in the past decade.

Improvements in ACP will have to be made within the framework dictated by the policy process. Changes in the programs' appropriations or even their distribution among states will have to be taken as given for the near future. Improvements in ACP, if any are to be made, must then be made at the state and local levels. The USDA, which has generally given support to ACP, can be an important factor in determining whether or not ACP is altered. By working through the state and local committees the USDA could direct changes in the conservation practices and cost-share arrangements. At present, the USDA seems either unwilling or unable, due to congressional restrictions, to provide the leadership. Consequently, the leadership may have to come from other institutions, possibly the land grant colleges.

CHAPTER V

STATE AND COUNTY POLICY FORMULATION

With the conclusion that changes in ACP will probably have to come at the state and county level, the next step is to study policy formulation at the local level. This chapter first considers the groups involved in developing and implementing state and county programs. Secondly, it develops two important aspects of policy formulation and finally it evaluates the impacts of policy formulation on program objectives and program changes.

Sixteen county office managers and/or the persons in charge of the county ACP were interviewed in the South Central and Thumb areas of Michigan. These interviews along with interviews of other individuals involved in ACP's development and implementation of the state and county ACP provide the basis for much of this analysis. Particular reference will be made to the sixteen counties surveyed as well as general references to the over all state program. While the general organization and duties of the policy making bodies are similar for other states and counties, the same cannot be assumed for policy formulation.

The Policy Making Bodies

Two groups are important in developing and implementing ACP in the states and counties. First are the Agricultural Stabilization and Conservation (ASC) committees who administer the state and county programs. The county ASC committees also approve or disapprove applications for ACP cost-sharing and authorize the payments to farmers.

The second policy making body, the development groups, selects the practices to be included in ACP. The State Development Group selects practices to recommend for the national program and determines which practices in the National ACP Handbook should be included in the state program. They specify practices, cost-share rates and steps to follow in applying the practices. Each county also has a development group that has much the same duties as the State Development Groups, but makes their suggestions to the state and selects their practices from the State ACP Handbook. The County Development Group can set cost-share rates at less than those offered by the state but cannot offer higher rates without approval of the ASCS Deputy Administrator of Conservation. Similarly, the State Development Group cannot offer cost-share rates higher than those offered in the National ACP Handbook without approval of the Deputy Administrator.

Also of importance is the composition of these two policy making bodies. State ASC Committees are made up of the State Director of Extension, an ex officio member, and three farmers, appointed by the Secretary of Agriculture. The county ASC committees are composed of the County Director of Extension, an ex officio member, and three farmers elected by their fellow farmers. The State ASC Committee thus may feel a stronger allegiance to the Secretary of Agriculture, who appointed it, than does the County ASC Committee who may feel its allegiance should go first to the farmers in the county that elect it.

The members of the State Development Group include the State ASC Committee, the State Conservationist of the SCS, and the Forest Service official having jurisdiction over farm forestry in the state. Others with conservation interests, such as representatives from the land-grant colleges, FHA and the State Soil Conservation Committee are invited to counsel with the group. The County Development Group consists of the County ASC Committee, the designated representative from the SCS in the county, and the Federal Forest Service representative having jurisdiction over farm forestry in the county. County Development Groups are also to work with those interested in conservation, such as the county extension agent, FHA County Supervisor, community committeemen and the governing body of the Soil Conservation District. Tile companies and other contractors who benefit

as much or more from ACP than the farmers are at times included among those interested in conservation, though their representation on the development groups may lead to a conflict of interests.

Policy Formulation

With this general background on the groups setting ACP policy, the next step is to study the actual formation of policy in Michigan. Two important parts are involved: first, selecting practices and second, approving farmer applications. Decisions concerning practices to include in ACP are made both at the state and county levels. The question is, what factors influence the decision makers when they select practices and set cost-share rates and restrictions? The factors vary somewhat between the sixteen counties surveyed, but at least five were significant. In some counties, however, only one factor was important while in others all five had an influence.

At the county level the single most important factor was farmer acceptance and use of the practices. Practices heavily used by farmers, such as liming, drainage and temporary cover, were the first included in the program. Yet some practices included are used very little but have a high conservation value. The main consideration, however, particularly in counties with excess appropriations, was the

inclusion of practices farmers would apply so the county could use all of its appropriations.

Another factor affecting the program's development is the proportion of county ACP funds used in past years. Counties short on ACP funds tend to include restrictions into their program on expensive and heavily used practices. These restrictions make funds available for other practices and allow more farmers to use the program. Individual preferences or interests of persons involved in the ACP development group meetings constitute a fourth factor. Those attending will be concerned about the practices they think have particular merit or benefit. Tile company representatives will be interested in the drainage practices, the forestry official will be concerned about the forestry practices and the sportsman will be interested in wildlife practices.

A fifth factor important in developing the new program is the previous program. The past program can provide a good basis for building the new program but not if it prevents change. Conservation needs change and objectives such as land-use adjustment receive added emphasis. Alterations in the program may be necessary to meet new conservation needs and provide new emphasis on particular objectives. Approval of last year's program for this year may be too easy and may prevent a much needed program reappraisal.

The second important aspect of formulating ACP policy is the county ASC committee's approval or disapproval of applications for ACP payments. The survey indicated that five criteria were used in allocating funds when appropriations were limited. Where the counties had adequate funds, the county committees approved all practices meeting the minimum requirements as set out in their county handbook, since they did not need any method for distributing the funds among farmers. On the other hand, some of the counties, with insufficient funds to approve all applications, used all five criteria in determining the distribution of ACP payments.

One criteria used was the placing of priorities on practices applied for by the farmer. If the county committee could not approve all the practices applied for, it would first approve the practice given the highest priority by the farmer. The farmer on his application for payments might list tile drainage first and the construction of a sod waterway second, thus tiling would have first priority for approval.

A second criteria used is the farmer's previous ACP payments; if he has obtained payments exceeding a set amount in the past two to five years he may not be able to obtain any this year. In some counties this restriction applied only to certain practices. For example, a farmer could get

payments for tiling once out of every three years, while he could receive them every year for such less expensive practices as green manure.

Size of farm constitutes another criteria used in deciding how much to cost-share with a farmer. The larger farmers are generally able to obtain payments on more land because, it is reasoned, they have more acres to conserve even though they may be those best able to carry out the practice without assistance. Individual preference of the county committee members for certain practices is still another criteria. When it is important, farmers applying for the committee's preferred practices can expect first priority in obtaining approval. The final factor, that is at times not even considered, is the conservation and land-use adjustment needs of the area. These are the general objectives of ACP but they seem to find too little consideration at the county level of program implementation.

This is possibly due to a lack of communication of objectives from the Secretary of Agriculture to the individual county committees. At the county level, too often, there was a lack of any real idea of what ACP was to achieve. Accomplishments were measured by the amount of funds distributed to farmers within the county. If the program got more funds to the farmer, it was fulfilling its purpose. Lack of communications may not be the fault of either the state or federal administration but rather due to the administrative

organization, where the county committees give their allegiance to their county's farmers. If this is true, then the best measure of benefits to the county committee may be the amount of ACP funds distributed in their county. There may be a good reason to ask whether ACP is implemented to obtain income payments for farmers or whether it is to obtain conservation and land-use adjustment.

Objectives

In the analysis of practice selection and approval, at least two objectives, other than the program objectives, were shown to be involved in the actual program development and implementation: (1) income support and (2) political support. Their importance is shown by the factors considered in selecting practices and by the criteria used in approving practices.

In the counties where funds are limited, practices are promoted that are less expensive and restrictions are placed on expensive practices. This is done in order that more farmers can get ACP payments, indicating a desire to allow more farmers to obtain an income payment. In fact, one administrator suggested that a better way to distribute ACP funds might be to divide it up between all farmers. He felt ACP did not reach the farmers who really need the money and an even distribution of funds would at least give something to those in need. Another indication of the income

support objective is the use of a past history of payments to determine who should receive payments. Counties seemed to attempt to distribute funds such that all farmers got their fair share as income supplement appeared to be more important than conservation or land-use adjustment.

Spreading funds among as many farmers as possible, seeing that the farmers get their fair share and selecting practices that the farmers want and use, indicate an effort to fulfill the objective of political support. The county committeemen are elected and their jobs depend rather directly on the farmers in their county. Consequently, it is to their advantage to set up ACP so that as many farmers as possible can use it. The ASC Committee members shy away from programs that attempt to emphasize any particular problem area within the county, since farmers from the other areas in the county might feel they were not getting their fair share. The desire to remain on the ASC Committee and keep the farmers happy can prevent the county ASC committeemen from initiating a program fitting the conservation needs of a county.

The State ASC Committee may have good reason not to push for any program changes that would bring strong objections from the farmers. This committee is appointed by the Secretary of Agriculture and its tenure depends on the political party in power. It, therefore, may not be in the State

ASC committee members' best interest to cut practices conflicting with other federal programs or to design the program such that it gets at the real conservation and land-use adjustment needs; farmers' use of the program may be more important.

Increased crop production is another objective fulfilled by certain ACP practices. The reaction to this objective can be placed in two general groups. First, several county office managers felt it was inconsistent for a farmer to come in, turn to the right and receive payments for reducing crop production, then turn left and receive ACP payments for liming, fertilizer, green manure or tile drainage that will increase crop production. Yet, others felt ACP was promoting practices that conserve the soil and increase productivity needed in the future to meet the increased demand for food and fiber. The former appears to be a fairly frank view of ACP, while the latter is the standard attempt to rationalize ACP with the surplus disposal program.

Program Changes

Turning to the question of modifying ACP, several problems became apparent in the previous discussion. First, what are the conservation and land-use adjustment needs of any particular county? Such needs are not well spelled out. As a result, it is difficult to convince either the ASC Committee or the Development Group that certain program

changes are badly needed. On top of this, it is too easy to reapprove the previous year's program; hence the state and county programs tend to stay the same, even though the program needs change.

Against these and other barriers that inhibit change, Michigan's state and county programs have undergone some important modifications. Two events seem to bring about changes in the program at this level; first, too high a concentration on certain practices and second, limited funds. Too high a percentage of ACP funds spent on tile drainage, in some counties as high as 99 percent, caused the State Development Group to drop the cost-share rate in eight counties from 50 to 30 percent in 1957. The general policy is to lower the cost-share rate to 30 percent in counties spending over 50 percent of their appropriated funds on tile drainage. By 1964, 22 counties were restricted to a 30 percent cost-share. On the other hand, practices with high social benefit but low private returns, have had their cost-share rates increased to 80 percent. However, further changes along this line have not been attempted. Cost-share rates for lime might be reduced while those for permanent cover, sod waterways and terracing might be increased to provide a greater fulfillment of the program objectives.

Changes at the county level have for the most part been brought about by fund shortages. When counties found they could not approve all requests for ACP payments, due to

fund shortages, changes began to appear in their programs. Restrictions, some explicit and others implicit, tended to make it possible for the counties to approve practices all year.

Three general types of restrictions were used in the sixteen counties surveyed. The most common was to limit the total amount a farmer could earn in ACP payments during one or several years. A closely related limitation was to restrict the amount a farmer could earn for "expensive" and/or popular practices, such as tiling, wildlife ponds and establishing permanent vegetation. Another technique used was to budget the ACP funds such that a set proportion would be available during different times of the year. A county would then have some funds left at the end of the year to cost-share on late practices.

The third general type of restriction, and the one which seemed to best fit the program objectives, was to reduce cost-share rates or the number of components paid for under a practice. This was done with practices the County Development Group felt were used too extensively or would be used equally as much at the reduced rate. Examples of these restrictions include a cut from 50 to 40 percent for lime in Ionia county, a reduction from 4 to 3 cents a pound for grass seed in Clinton county and a complete dropping of fertilizer payments for the green manure practices in Lenawee county.

If the cuts in cost-share rates do not significantly reduce participation, they would allow ACP to achieve essentially the same practice adoption at a lower cost.

Another program change that seems worth further trial is the higher cost-share rates for farmers using a practice for the first time. Huron and Sanilac counties will cost-share 50 percent for the first ten acres a farmer tile drains. This gives an added incentive to those who have not previously used the practice, since both counties normally cost-share only 30 percent. Such a technique relies on the demonstration effect which states that once a farmer discovers the worth of a practice he will continue it without further payments, but further study is needed to determine if this is actually the case.

Summary

It appears at least three additional objectives are important at the local level: (1) income support, (2) political support and (3) increasing productivity to meet future needs for food and fiber. Where these are given major emphasis ACP may fall short of the program objectives. And where these objectives are in conflict with the surplus disposal programs, ACP will help cause other federal programs to fall short of their objectives.

The many objectives held for ACP point out the need for an improved definition of objectives along with a better job of communication. In addition, an improved designation of conservation and land-use adjustment needs is necessary so county and state ASC committees and development groups can use them in developing and implementing their programs. This should include a general specification of the major conservation problems within counties as well as a rather specific designation of problem areas. Armed with this information, the county committees might be able to gain support for programs that concentrate on the particular conservation problem areas.

CHAPTER VI

PERFORMANCE AND THE DISTRIBUTION OF PAYMENTS

The last three chapters have reviewed the politics and administration of ACP, while developing the objectives influencing its operation. The next step is to evaluate ACP's past performance in light of these objectives. Chapters VI and VII compare both explicit and implicit objectives with the distribution of ACP payments and the resulting practice use.

To begin with, ACP is designed to fulfill the objectives of conservation of soil, water, forests and wildlife, and land-use adjustment. These objectives are to be met by: (1) confining the program to conservation practices on which federal cost-sharing is most needed to achieve maximum conservation benefits, (2) encouraging those conservation practices that provide the most enduring conservation benefits, particularly the establishment of permanent vegetative cover, (3) cost-sharing only on conservation practices that farmers would not carry out to the needed extent without program assistance, (4) setting cost-share rates at the minimum required to substantially increase performance of needed conservation practices, (5) excluding practices that develop

new or additional farmland by measures, such as drainage, irrigation, and land clearing, and (6) requiring the farmers to assume responsibility for the upkeep and maintenance of the conservation practices.

Before beginning the evaluation of ACP's performance relative to its objectives, the program objectives need further interpretation. What is actually implied by these restrictions under which ACP is to be fulfilled? First, a limited amount of money is available for payments, and practices should be selected that maximize conservation and land-use adjustment benefits. For this reason, funds should be shifted from practices and areas with lower benefits per unit of federal funds to those with higher benefits, assuming the practices receiving the additional funds also meet other program restrictions. Second, practices providing enduring conservation benefits, particularly practices promoting permanent vegetative cover, should have first claim on ACP payments. Third, payments should be restricted to practices the farmer would not undertake on his own. Hence, normal farming practices or established conservation practices should be excluded from the program. The fourth restriction requires cost-share rates to be the minimum necessary to obtain needed conservation. Consequently, cost-sharing rates should be varied, encouraging practices giving the highest social returns. Fifth, conservation practices

are not to bring new lands into production, implying that the primary effect of ACP practices should not be to encourage increased crop production. Finally, the program should not include maintenance practices.

Practices should be selected that give the highest increment of enduring conservation and land-use adjustment benefits per increment of government cost. These costs would include any surpluses caused by the program's production increasing aspects, as well as direct costs. Practices with high conservation benefit may not have a high priority due to their high cost or temporary effectiveness. The critical practices to promote would be those practices preventing irreparable damage or providing extensive downstream benefits. Practices of low conservation benefits would include those that could be undertaken at a latter date without causing any irreparable damage to the resource. For example, it makes little difference whether land is drained or irrigated now or twenty years hence, production is still substantially increased.[1]

ACP should attempt to promote those practices preventing damage to land-use capacity needed for the future that cannot be repaired at a reasonable cost. If the cost

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[1]One exception to this statement is found in the West where drainage is necessary in some areas to prevent salt damage that would make land already in use unfit for crop production.

of the conservation practices is greater than the cost of repairing the damage, then it should not be promoted by ACP. But when the cost of repairing the damage is greater than the cost of the conservation practice, there may be a case for ACP assistance.

ACP Policy (1946-64)

Two general types of policies have been used in the administration of ACP since it became strictly a conservation program; both have been used to fulfill essentially the same objectives. During 1946-53, payments were made for a wide range of practices including liming, fencing, land clearing, weed control and terracing. The emphasis was on increasing use of individual practices that might be used to promote soil and water conservation. This is contrasted with the package practice approach of 1954-65, which made payments for fencing, liming and fertilizer as part of other practices.

The present policy emphasizes the conservation practice rather than the individual parts. This has eliminated some uses of lime and fertilizer that led directly to increased production, although a farmer can still earn ACP payments for lime and fertilizer by planting a green manure crop which when plowed under can be planted to corn or wheat. The farmer can then take advantage of both the minerals and the organic matter to increase production.

New restrictions, such as the soil testing requirement for lime and fertilizer, added to the inconveniences of obtaining payments and appeared to reduce participation. Hence, along with possible movements towards better fulfillment of program objectives, ACP was not meeting objectives held by those administering it. The state and local committees may well have desired higher participation rather than curtailment of production increasing practices. But before the specific objectives are analyzed, a general picture is needed of ACP's past distribution of funds and its performance under the two different policies.

ACP's use of funds is shown from 1946 through 1963 to provide a basis for comparing objectives with performance. The years 1946-53 will be fairly representative of the old policy, while 1954-63 will represent the present package practice approach. A few changes occurred during 1961-63, since a new administration took over in 1960. Also, 1953 represents the transition year when the old policy was being directed by a new administration and the new policy was being developed. Therefore, the two seven year periods, 1946-52 and 1954-60, will provide the best basis for comparing the two policies.

Distribution of Funds

To evaluate the past distribution of ACP funds, practices have been grouped according to their ability to fulfill program objectives. Such a grouping will indicate whether the proportion of funds has changed since 1946 and if it has, whether the change has been towards a better fulfillment of program objectives.

Practices were placed in three general groups: Group I, practices least fulfilling objectives; Group II, practices most fulfilling objectives; and Group III, practices not in the previous groups. The dividing line between these three groups is admittedly fuzzy, but in order to consider the total program, practices were placed in the group they seemed best to fit.

In categorizing the ACP practices, a specific criteria was derived from the program objectives. Practices least fulfilling objectives, Group I practices, fell under three general headings. First are those practices that caused substantial increases in crop production while contributing little to conservation or land-use adjustment. Here the increase in production is generally sufficient to pay off the investment within a fairly short period of time and the farmer generally undertakes these practices if he is aware of their profitability and has sufficient capital.

The benefits accruing to the nation and not the farmer are usually less than the cost-share. Second are those practices having low returns to both the farmer and the general public relative to their cost. A calculation of the costs and benefits would show these practices as not profitable, no matter what benefits are considered. And finally, there are normal farming practices or established practices that farmers would generally undertake without assistance. For the most part, these practices benefit the nation, but the farmer receives early returns, usually sufficient to encourage practice adoption.

Group II practices, those most fulfilling program objectives, tend not to increase present crop production while they help bring about needed land-use adjustment and conservation. As part of the land-use adjustment objective, practices are included that help prevent shifts from the production of permanent cover or trees to the production of crops. Returns from the Group II practices are usually low as compared to their cost, or the returns are a long time in accruing to the farmer. In addition, many of the returns or benefits may not be captured by the farmer but are captured by other downstream farmers or the nation as a whole, particularly future generations.

Finally Group III practices, those not in the other two groups, include some fairly inexpensive practices that

may be established or normal farming practices. Returns to the farmer from these practices may be hard to see but are generally not long in accruing. The nation benefits from the soil and water conservation aspects of these practices since they prevent damages to our resources. This being the case, there may be reason to subsidize these practices in areas where they have not become established and where the returns, not captured by the farmer, are in excess of the federal cost-share. In other areas, these practices should not be subsidized since farmers will apply the practices without assistance or the returns to the nation are low relative to their costs. The returns may also vary from year to year so that payments should only be offered in specific years, such as drought years. Hence, most of these practices should be offered only as special practices and included where they are not established and their national benefits are shown to exceed the cost-share.

Although some practices do not fit neatly into one category or another, they were placed in the group where their largest percentage fell. For example, all the temporary cover practices were put in Group III, although year around cover might fit in Group II and green manure would go in Group I. Data was not available giving the breakdown of each type of temporary cover before 1954 nor in 1963, therefore, they were taken as a group. The only practices divided were fertilizer and lime since they were reported separately

before 1954. The minerals used in cover crops and other vegetative practices were included as part of the cost of vegetative practices from 1954-63, though not from 1936-53. Thus, lime and fertilizer were divided up among the three groups for the years previous to 1954, based on the 1954-63 distribution.

The effect of placing the total practice in one group rather than dividing them should balance out. That portion of the liming practice not belonging in Group I will be balanced by the portion of temporary cover not belonging in Group III or the portion of improvement of pasture not belonging in Group II. The classification was not designed to condemn any particular practice but rather to show general relationships between certain aspect of ACP.

For a more detailed analysis, each group was divided into 5 to 7 practice subgroups. The ACP practices included in each subgroup are listed in Table 5. References should be made to this table before preceding to the analysis and discussion of ACP's distribution of payments.

Table 5. Practice classification

Subgroups	Major Practices Included in Each Subgroup
Practices Least Fulfilling Objectives (Group I)	
1. Lime and other minerals	Lime and fertilizers not used with specific conservation practices (the A-4 practice)
2. Drainage	Tile drainage, open farm drainage ditches and shaping or land grading to permit effective surface drainage
3. Irrigation	Reorganizing irrigation systems, leveling land for irrigation, reservoirs for irrigation water and lining irrigation ditches
4. Practices discontinued	Weed control, land clearing, tillage to protect summer fallow, seeding hay crops, cross-slope farming, mowing weeds, maintenance practices, organic manuring, lining earthen reservoirs, harvesting legume and grass seed, planting for seed and reclaiming eroded land
5. Others	Well construction, tillage operations on pasture, installing pipes and storage tanks, fencing, hedgerow removal, artificial watersheds and leveling of non-irrigated cropland
Practices Most Fulfilling Objectives (Group II)	
6. Permanent vegetative cover	Establishment of permanent vegetative cover for conservation and land-use adjustment, permanent cover in orchards and vineyards
7. Terraces and other erosion control	Terracing, establishing sod waterways, outlet protection, building erosion control dams, channel clearance, levee construction and establishing permanent vegetation on outlets
8. Forestry	Tree or shrub planting for forestry purposes, erosion control and windbreaks, forestry improvement

9. Improving vegetative cover	Reseeding of pasture and range
10. Lime and other minerals	Estimated portion of minerals used for establishing and improving permanent vegetative cover during 1946-53
11. Conserving livestock water	Building dams or reservoirs for livestock water, improving springs or seeps and establishing fireguards.
Practices Not In The Other Two (Group III)	
12. Lime and other minerals	Estimated portion of minerals used for green manure and other temporary vegetative cover practices during 1946-53
13. Green manure and temporary cover	Green manure, winter cover, summer cover and all year cover practices
14. Additional legumes and grasses	Additional acreages of cover in crop rotations and additional seedings of legumes and grasses
15. Mulching and emergency tillage	Mulching and emergency tillage on cropland, contour farming, crop residue management, stubble mulching and other wind control measures
16. Stripcropping and contouring orchards	Contour stripcropping, stripcropping and contouring orchards
17. Competitive shrub control	Control of competitive shrubs on range or pasture land
18. Others	Subsoiling, establishing stock trails, deferred grazing, wildlife practices, restoration of floodland by leveling, special county practices along with other special and miscellaneous practices

United States

Within this general framework, the analysis of ACP's performance begins by considering the total United States' program. Here the proportion of funds going to each major group seems very stable (see Table 6). In fact, they may be too stable, considering the major changes that have taken place in United States agriculture since 1946. On the average, the distribution of funds from 1946-52 was about 40, 27 and 33 percent for Group I, II, and III practices respectively, while from 1954-60 the figures were 36, 36, and 28 percent. This implies the package practice approach moved the program a little closer to fulfilling its objectives as Group II practices increased at the expense of the other two groups. Still, over one-third of the payments go to practices least fulfilling program objectives and this share has increased during the sixties after a slight decline in the fifties.

In 1956 the impact of the package practice policy and changes in cost-share rates pushed the Group II practices from 30 to 36.6 percent. This increase in Group II's relative share, that actually started in 1946 or earlier, continued throughout the fifties reaching its peak share of 40.9 percent in 1959. Two other important shifts were brought about by the policy change. First, the share going to minerals other than lime decreased from 26.5 to 18.7

Table 6. ACP practices grouped by ability to fulfill objectives in the United States (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	40.7	40.3	38.8	39.5	38.2	37.7	34.5	33.6	35.6	34.6	41.1	38.3	35.9	36.3	38.6	41.2	40.7	45.4
1. Lime and other minerals	20.1	19.8	18.8	19.2	18.2	18.9	17.5	16.9	18.9	16.9	21.4	22.3	21.2	19.5	21.3	23.1	20.8	20.7
2. Drainage	8.6	9.2	8.8	9.3	8.4	8.3	6.2	5.7	6.4	6.8	5.2	4.1	3.5	3.5	4.2	4.2	4.2	3.3
3. Irrigation	9.2	8.9	8.7	8.5	8.8	8.4	8.1	7.8	7.7	8.0	5.2	4.0	3.8	3.6	3.9	3.5	3.5	3.0
4. Practices discontinued	...	...	...	...	...	...	...	(a)	0.6	0.5	7.3	6.2	5.6	8.0	7.8	9.2	10.2	16.9
5. Others	2.8	2.4	2.5	2.5	2.8	2.1	2.7	3.2	2.0	2.4	2.0	1.7	1.8	1.7	1.4	1.2	2.0	1.5
Group II	39.4	38.9	37.4	38.9	40.9	39.6	37.4	36.6	30.0	30.9	27.3	28.6	30.8	28.4	27.4	25.5	25.2	24.5
6. Perm. vegetative cover	15.5	15.9	15.3	15.2	15.7	14.6	13.9	11.0	7.5	7.2	0.3	0.3	0.4	0.8	0.4	0.4	0.4	0.3
7. Terraces & erosion control	8.4	8.1	7.5	8.1	8.5	9.1	7.7	7.7	5.6	6.2	3.8	4.1	4.3	5.1	5.3	4.7	4.2	3.3
8. Forestry	2.9	3.3	3.2	3.4	3.4	3.0	2.3	1.7	1.2	1.0	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2
9. Improving veg. cover	6.7	6.4	6.2	6.3	6.3	6.2	6.8	9.5	9.2	8.1	8.3	9.0	10.5	8.2	6.7	5.7	5.7	4.8
10. Lime & other minerals	...	...	...	...	...	...	...	...	...	...	10.6[b]	11.1	10.6	9.7	10.7	11.5	10.4	10.3
11. Conserv. livestock water	5.9	5.2	5.2	5.9	7.0	6.7	6.7	6.7	6.5	8.4	3.8	3.7	4.6	4.3	4.0	2.9	4.3	5.6
Group III	19.9	20.8	23.8	21.6	20.9	22.7	28.1	29.8	34.4	34.5	31.6	33.1	33.3	35.3	34.0	33.3	34.1	30.1
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	10.7	11.2	10.6	9.7	10.7	11.5	10.4	10.3
13. Gr. manure & temp. cover	9.0	9.6	11.8	9.8	9.2	11.0	13.1	12.7	18.8	21.5	9.6	12.6	12.9	13.3	14.1	13.9	13.7	11.8
14. Add. legumes & grasses	2.1	2.7	3.2	3.2	3.2	3.6	6.0	8.6	6.3	6.1	4.2	3.2	3.3	4.9	...	...	(a)	...
15. Mulch. & emergency tillage	3.0	2.9	3.5	3.2	3.1	3.0	3.9	3.5	5.1	2.6	2.7	2.3	2.9	3.2	4.1	4.1	4.2	4.5
16. Stripcrop. & contour orch.	0.5	0.4	0.5	0.6	0.5	0.6	0.9	1.2	1.1	1.1	2.1	1.7	1.5	1.7	1.7	2.0	1.6	1.5
17. Competitive shrub control.	3.2	3.3	3.3	3.2	3.2	2.4	2.1	2.2	2.5	2.7	1.4	1.4	1.4	1.3	1.1	0.8	1.1	1.2
18. Others	2.1	1.9	1.5	1.6	1.7	2.1	2.1	1.6	0.6	0.5	0.9	0.7	0.7	1.2	2.3	1.0	3.1	0.8

[a]Less than .05%.

[b]The distribution of minerals from 1946-53 was 1/4 to each Group II and III and 1/2 to Group I.

Source: Agricultural Conservation Program, Summary By States 1958-1963; Summary 1952-1957; Summaries By States 1947-1951; Statistical Summary 1946 (Washington: Government Printing Office, 1947-1964).

percent, while the share going for liming materials increased only slightly. Second, the proportion spent on temporary practices declined from 43.6 percent in 1946 to 11.9 percent in 1963, with the largest drop coming in 1954 of from 30.3 to 24.7 percent. The changes have not been drastic, although they appear to have moved ACP closer to fulfilling its objectives (see Table 7).

The major shifts in relative shares, however, does not become apparent until the subgroups are studied; here the effect of ACP's change becomes vivid. Some difficulties arise in evaluating the shifts in emphasis favoring the permanent vegetative cover practices, subgroups 6, 9 and 10. Before 1954 the permanent vegetative cover practices were divided into essentially three groups: (1) establishment of permanent vegetative cover to control erosion on steep slopes, (2) seeding and reseeding pasture and range, and (3) establishment of permanent vegetative cover in orchards or vineyards and the fertilizer and lime applied along with each practice. Then beginning with 1954, the permanent cover practices were divided into two groups: subgroup 6, permanent vegetative cover that includes establishment of cover on steep slopes, in orchards, vineyards or pastures; and subgroup 9, improvement of permanent vegetative cover that includes reseeding of pasture and range. Due to the difficulty involved in dividing up the seeding and reseeding

Table 7. The proportion of ACP payments used for minerals and temporary practices in the United States (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	11.91
1962	38.79	21.39	17.40	12.53
1961	38.21	20.10	18.11	15.27
1960	38.84	20.53	18.31	13.05
1959	37.93	19.79	18.14	12.28
1958	38.80	19.99	18.81	14.03
1957	38.14	18.43	19.71	16.97
1956	37.71	18.25	19.46	16.22
1955	41.17	18.87	22.30	24.53
1954	39.91	21.17	18.74	24.73
1953	42.72	16.19	26.53	30.29
1952	44.58	17.85	26.73	32.20
1951	42.36	17.19	25.17	31.88
1950	39.00	15.96	23.04	34.17
1949	42.65	18.30	24.35	36.71
1948	46.05	21.98	24.07	38.78
1947	41.61	22.26	19.35	38.43
1946	41.37	23.40	17.97	43.60

*Data not available.

Source: Agricultural Conservation Program, Statistical Summary 1946-1963 (Washington: Government Printing Office, 1946-1964).

practices of 1946-53, they were all placed into subgroup 9. Thus, subgroup 6 will tend to be underestimated from 1946-53, while subgroup 9 is overestimated.

To evaluate the impact of the policy change in 1954, subgroups 6, 9 and 10 are added together. When this is done, the proportion of funds going for all permanent vegetative cover practices actually shows a decline of from 20.4 percent in 1952 to 15.3 percent in 1954 before rising to a high of 22.3 percent in 1962. While the total proportion going to permanent vegetative cover practices has not changed greatly since it reached 20.5 percent in 1956, the relative share going for improving vegetative cover and for establishment of vegetative cover has changed. The proportion used for establishment of vegetative cover has steadily increased from 7.2 percent in 1954 to 15.9 percent in 1962, whereas that going for improvement of vegetative cover has been fairly constant since 1957 at between 6.2 and 6.8 percent.

The real increases in permanent vegetative cover, therefore, did not appear to arise until the middle or late fifties, two or three years after the change to the package practice approach. The actual breakdown of how the funds were spent before 1954 is not clear, so the 1954 change may have eliminated payments for permanent vegetative cover that would have been done by the farmers on their own. Hence, the decrease in proportion of funds used for vegetative

cover in 1954 and 1955 does not necessarily mean a movement away from program objectives.

If the increase in permanent vegetative cover practices during the middle fifties is combined with the share going to subgroups 7, 8 and 11, they account for all the increase in Group II. Forestry practices, subgroup 8, jumped from 0.5 percent in 1953 to 3 percent by 1958. Terracing and other erosion control practices, subgroup 7, went from 3.8 to 9.1 percent during the same period while the practices for livestock water conservation, subgroup 11, climbed from 3.8 to 6.7 percent.

On the negative side, irrigation and drainage practices, subgroup 3 and 2 respectively, increased from 8.1 percent in 1952 to 17.8 percent in 1960. Off setting these increases, however, was the decrease in the share going to subgroup 1 and the discontinuing of some established and reoccuring practices. The decrease in minerals was probably due to the new restrictions on their use, while irrigation and drainage practices increased as they were considered enduring practices.

The green manure and other temporary cover practices have been fairly constant since 1946 with the exception of 1954 and 1955. But when the estimated proportion of minerals used on these practices is added for 1946-53, a definite decrease becomes apparent in 1956. The temporary cover

practices, along with the stripcropping practices, appear to have declined during the middle fifties. In the late fifties and early sixties subgroup 14, planting additional legumes or grasses, decreased while subgroup 17, competitive shrub control, continued to increase.

These changes were in the right direction, although they really did not go far enough; over 40 percent of the payments are still made for practices least fulfilling program objectives. This, along with the steady increase in the irrigation and drainage practices indicate a need for further program reappraisal. As indicated in Chapter IV, such practices are necessary to maintain political support for ACP in the western and midwestern states. Without the irrigation practices there would be few outlets for ACP funds and no votes for the program in the West.

State Programs

With the need for reappraisal apparent, the program will be disaggregated to see how individual states have distributed their payments. Since the state programs can vary as much as night and day, need for improvement at the state level may also vary. For example, Utah spends 75 percent of ACP funds on irrigation while New York spends almost as high a proportion on liming materials. These differences are due to many things, of which climate and soil characteristics

seem to play a significant role. The USDA has been instructed to give states as much flexability as possible in developing their programs; the states select practices the farmers will use and possibly those needed to solve conservation and land-use adjustment problems.

The states selected for anlaysis are: (1) California representing the Pacific Coast states, (2) Utah representing the Mountain states, (3) North Dakota representing the Northern Plains states, (4) Texas representing the Southern Plains states, (5) Iowa representing the Midwestern states, (6) Michigan representing the Lake states, (7) New York representing the Northeastern states, (8) Virginia representing the Appalachian states and finally (9) Georgia representing the Southeastern states.

California

The distribution of ACP payments in California is very similar to most of the western states, particularly in the heavy use of irrigation practices. In 1963 over half of the payments were used for irrigation practices, while only a quarter went to practices best meeting program objectives (see Table 8).

Although ACP's present distribution of payments in California is further from meeting the program objectives than is the United States total, it is an improvement over the 1946-52 distribution. The average distribution of

Table 8. ACP practices grouped by ability to fulfill objectives, California (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	69.2	72.5	70.0	67.8	63.1	57.8	60.2	37.4	65.4	70.2	74.6	73.6	70.5	69.3	76.3	67.8	56.3	60.1
1. Lime and other minerals	0.2	0.2	0.2	0.3	0.2	0.2	0.4	0.1	0.5	0.3	13.3	10.3	9.7	8.0	11.0	6.7	13.3	12.9
2. Drainage	9.3	11.5	11.2	9.8	9.5	10.5	13.6	8.7	10.8	8.6	8.5	9.7	7.0	3.6	2.8	3.3	3.5	2.7
3. Irrigation	56.3	57.2	54.1	54.1	50.5	45.1	43.3	26.9	50.0	55.7	40.4	44.6	43.1	46.5	53.2	46.1	26.4	21.4
4. Practices discontinued	1.1	1.1	1.0	1.0	0.6	0.2	...	...	...	...	9.3	6.8	7.1	7.1	6.7	9.1	10.9	21.6
5. Others	2.3	2.5	3.5	2.6	2.3	1.8	2.9	1.7	4.1	5.6	3.1	2.2	3.6	4.1	2.6	2.6	2.2	1.5
Group II	25.5	24.3	25.8	28.6	32.4	36.5	35.2	38.1	27.8	20.7	14.8	16.3	20.6	20.3	14.0	12.6	14.3	13.1
6. Perm. vegetative cover	4.6	5.8	5.5	6.5	5.8	5.7	6.8	11.3	3.2	1.5	0.1	0.3	...	0.3	0.2	(a)	(a)	(a)
7. Terraces & erosion control	12.7	9.5	8.8	11.8	16.7	22.6	18.3	21.1	9.1	9.0	4.0	4.8	3.9	2.5	1.9	0.8	1.8	3.1
8. Forestry	4.1	3.3	3.2	2.2	1.5	1.7	2.0	0.4	0.3	0.1	(a)	(a)	(a)	(a)	(a)	(a)	(a)	...
9. Improving veg. cover	1.4	2.0	2.8	2.8	2.4	3.1	3.5	2.9	8.9	4.0	6.6[b]	8.0	11.5	12.2	8.0	7.3	8.3	5.6
10. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	1.7[b]	1.3	1.2	1.0	1.4	0.8	1.7	1.6
11. Conserv. livestock water	2.7	3.7	5.5	5.3	6.0	3.4	4.6	2.4	6.3	6.1	2.4	1.9	4.0	4.3	2.5	3.7	2.5	2.8
Group III	5.3	3.2	4.2	3.6	4.5	5.7	4.6	24.5	6.8	9.1	10.6	10.1	8.9	10.4	9.7	19.6	29.4	26.8
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	1.7	1.3	1.2	1.0	1.4	0.9	1.7	1.6
13. Gr. manure & temp. cover	0.4	0.2	0.4	0.1	0.1	0.1	0.9	0.1	0.9	...	2.2	2.8	0.9	2.7	1.9	3.5	10.9	14.2
14. Add. legumes & grasses	(a)	0.1	0.1	0.1	0.2	(a)	0.1	0.1	0.6	1.2	1.2	1.3	0.9	1.2	...	...	...	...
15. Mulch. & emergency tillage	0.2	0.3	0.1	0.4	0.5	0.5	0.7	0.7	1.0	0.9	1.2	0.4	0.8	1.9	1.4	1.5	1.8	1.9
16. Stripcrop. & contour. orch.	...	(a)	(a)	...	(a)	(a)	0.1	(a)	...	0.1	0.5	...	...	0.3	0.3	...	...	0.3
17. Competitive shrub control	3.0	1.8	2.8	2.2	2.4	2.3	1.9	0.9	3.7	6.4	1.7	1.3	0.9	0.4	0.3	...	...	...
18. Others	1.7	0.8	0.8	0.8	1.3	2.8	0.9	22.7	0.6	0.5	2.1	3.0	4.2	2.9	4.4	13.7	15.0	8.8

[a]Less than .05%.

[b]The distribution of minerals from 1946-53 was 10% to each Group II and III and 80% to group I.

Source: See Table 6.

payments in 1946-52 was 68, 16 and 16 percent to Groups I, II and III respectively. This is compared to a 60, 31 and 8 percent distribution for 1954-60 and a 71, 25 and 4 percent in 1961-63. Improvement appears to have occurred under the package practice approach, although some of the improvements were lost by 1961-63. During 1953-54 the share of payments for fertilizers and temporary practices was drastically cut and the cuts have been sustained (see Table 9). The share going to fertilizers dropped from 16.4 to 0.8 percent during 1953-54, while temporary practices went from 13.4 to 0.9 percent and have been less than 2 percent ever since. But the 1953-54 change was no more significant than that occurring in 1948, as temporary practices dropped by more than 10 percent and minerals declined by over 8 percent.

Since the two largest cuts in the temporary practices occurred during the years when ACP appropriations were greatly reduced, there is good reason to suspect that cuts in appropriations helped reduce the shares going to temporary practices. During 1953-54 the reduced appropriations along with the policy change, most likely, caused the program to move closer to its objectives; which was the more important is difficult to determine. The analysis of other states may provide the evidence necessary to answer this question.

Table 9. The proportion of ACP payments used for minerals and temporary practices, California (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	1.7
1962	1.6	.1	1.5	1.6
1961	1.5	.2	1.3	1.6
1960	1.8	.3	1.5	1.5
1959	1.7	.2	1.5	1.2
1958	1.6	.2	1.4	.8
1957	2.2	.4	1.8	1.6
1956	3.5	.1	3.4	.8
1955	3.6	.5	3.1	1.9
1954	1.1	.3	.8	.9
1953	16.7	.3	16.4	13.4
1952	12.8	.2	12.6	11.0
1951	12.1	.4	11.7	9.0
1950	9.9	.3	9.6	12.6
1949	13.8	.3	13.5	10.6
1948	8.4	.4	8.0	14.9
1947	16.6	2.2	14.4	25.3
1946	16.1	2.3	13.8	39.4

*Data not available.

Source: See Table 7.

While the decreases in fertilizer and temporary practices became apparent in 1954, the increase in Group II practices began gradually and reached a peak of 38.1 percent in 1956. Besides these general changes, the irrigation and drainage practices increased in 1954 and counterbalanced the decrease in payments used for fertilizers. This was followed in 1956 by a big drop in the irrigation practices, as a large proportion of ACP payments, 22.4 percent, went to restoring flood damaged land. The share going to irrigation was quickly restored and it reached a new high of 57.2 percent by 1962. The big increase in drainage practices occurred in 1950-51 as their share went from 3.6 to 7 percent and then to 9.7 percent in 1952. Although the drainage practices reached a high of 13.6 percent in 1957, their share was 9.3 percent in 1963.

Another important increase appeared to occur in subgroup 6, permanent vegetative cover practices, which went from almost nothing before 1954 to a level of 5 to 7 percent by 1957. As pointed out earlier, this is at least partially due to an underestimation of the subgroup before 1954. When the two permanent vegetative cover subgroups are added together, they show a decrease in 1954 before the peak of 14.2 percent was obtained in 1956. After 1956, however, their share dropped steadily to only 6 percent in 1963, the lowest since 1946 with the exception of 1954.

On the other side, erosion control devices, subgroup 7, increased from 4 to 9 percent in 1953-54 and then jumped from 9 to 21 percent in 1955-56. From this high level, they began to decline in 1959 and received only 13 percent of the payments in 1963. The relative share going to forestry practices increased from less than 0.05 percent in 1953 to 0.1 percent in 1954 before jumping to 2 percent in 1956-57 and then reached 4 percent by 1963. The decline in permanent vegetative cover practices, terraces and other erosion control devices, as well as practices conserving livestock water, brought about the decline in Group II during the late fifties and early sixties.

Most of the subgroups in Group III are small relative to the others. The only subgroup of any consequence since 1953 is subgroup 17, control of competitive shrubs, that increased from 0.3 percent in 1949 to 6.4 percent in 1954. Its share has declined since then and was only 3 percent in 1963. The only other significant subgroup, temporary cover practices, was completely dropped in 1954 after sharing over 2 percent of the payments in 1952-53 and as much as 14.2 percent in 1946. The practices were restored in 1955 but have been less than 1 percent. Moreover, note that the 2 percent level of 1952-53 does not include any fertilizer and lime. Consequently, a level of over 3 to 20 percent during 1946-52 is more relevant for comparison with the 1954-63 level.

In summary, ACP in California appears to have benefited from the change to a package practice approach as it moved closer to its objectives, particularly by 1956. But the impact of the tighter restrictions began to wear off by 1957 and the remainder of the period saw losses in the improvements of the middle fifties. From the present trend in payment distribution, no major changes seem in the offing while much room remains for improvement. Nearly 70 percent of ACP funds is used for practices least fulfilling objectives, while only 25 percent goes to those best meeting objectives.

ACP in the other Pacific Coast states is not as heavily weighted as California with irrigation practices and more of its payments go for vegetative cover practices. The need for improvement may be less in the other Pacific Coast states; Oregon, Washington, and Montana are the only Western states that do not use over 50 percent of their payments for irrigation practices. The heavy use of irrigation practices and the need for their de-emphasis in the Western states will become even more evident as ACP in Utah is analyzed next.

Utah

In Utah, only small changes have occurred in the proportioning of funds among the three groups (see Table 10). In fact, what changes did occur are contrary to the objectives and the general United States trend. The average distribution of payments changed from 75, 16 and 9 percent in 1946-52 to 82, 12 and 6 percent in 1954-60 and to 87, 9 and 4 percent in 1961-63 for Group I, II and III practices respectively. The practices best fulfilling the program objectives have been on the decline, whereas those least meeting objectives have increased. The change to a package practice approach seemed to encourage the use of practices falling in Group I.

One of the few positive changes brought about by the package practice policy was a sharp reduction in temporary practices and mineral applications. In 1953-54 the temporary practices' share dropped from 10.5 percent to nothing, but was reinstated in 1955 and maintained at a level of less than 1 percent from 1957-63 (see Table 11). This decline was, however, not much larger than the decrease in 1948 and was less than the decrease in 1947. The 1948 decrease was probably helped by the cut in appropriations but, like the decrease in 1947, was mainly the result of discontinuing payments to some normal farming practice.

Table 10. ACP practices grouped by ability to fulfill objectives, Utah (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	85.5	87.4	88.8	87.1	84.9	79.8	77.8	75.0	88.0	84.1	86.6	81.4	76.9	69.0	73.4	69.3	74.2	80.6
1. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	4.9[b]	7.8	6.0	5.6	9.6	...	10.1	7.5
2. Drainage	2.6	2.2	2.6	3.3	4.5	3.9	4.4	3.7	3.2	6.3	6.0	4.8	4.6	2.8	2.4	4.1	2.6	4.1
3. Irrigation	71.9	77.7	75.8	77.5	73.4	69.6	67.5	67.1	79.8	73.0	53.1	46.9	47.5	43.3	43.8	48.5	34.9	24.7
4. Practices discontinued	0.1	(a)	(a)	(a)	0.1	0.1	0.1	0.1	1.1	...	10.3	10.6	6.9	6.3	7.0	3.7	16.9	43.1
5. Others	10.9	7.5	10.4	6.3	6.9	6.2	5.8	4.1	3.9	4.8	12.3	11.3	11.9	11.0	10.6	13.0	9.7	1.2
Group II	9.3	8.3	7.9	9.0	10.8	13.5	13.7	16.6	9.4	11.6	9.7	13.5	14.3	24.3	17.2	16.7	13.5	15.6
6. Perm. vegetative cover	2.1	2.4	1.3	1.7	2.2	3.5	3.9	3.2	2.4	3.0	(a)	(a)	(a)	(a)	0.1	0.1	0.1	(a)
7. Terraces & erosion control	3.1	3.0	2.0	3.0	4.1	6.5	6.6	7.5	3.0	3.4	4.0	1.9	3.1	4.8	5.2	7.8	5.1	4.8
8. Forestry	(a)	(a)	(a)	...	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
9. Improving veg. cover	2.7	1.5	1.5	2.4	2.3	2.5	1.8	2.9	1.7	2.7	4.0	10.0	9.1	17.7	9.8	5.0	4.6	5.0
11. Conserv. livestock water	1.4	1.4	3.1	1.9	2.2	1.0	1.4	3.0	2.3	2.5	1.7	1.6	2.1	1.8	2.1	3.8	3.7	5.8
Group III	5.2	4.3	3.3	3.9	4.3	6.7	8.5	8.4	2.6	4.3	3.7	5.1	8.8	6.7	9.4	14.0	12.3	3.8
13. Gr. manure & temp. cover	...	(a)	(a)	(a)	(a)	(a)	0.1	0.1	0.1	...	0.2	0.4	0.4	0.6	1.2	1.4	0.7	0.7
14. Add. legumes & grasses	0.3	0.5	0.5	0.2	0.6	1.5	3.5	1.7	0.5	0.3	...	...	...	...	...	...	...	...
15. Mulch. & emergency tillage	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.9	...	...	...	...	4.1	...	0.1	4.7	...	0.5
16. Stripcrop. & contour. orch.	0.8	0.3	0.3	0.8	0.2	0.7	1.0	1.8	0.6	1.6	1.0	1.9	0.6	0.5	0.3	...	...	...
17. Competitive shrub control	2.3	1.7	1.2	1.6	1.9	2.4	1.7	1.5	1.4	2.3	1.2	1.3	2.1	3.0	2.6	2.7	1.9	1.1
18. Others	1.7	1.7	1.2	1.2	1.5	2.0	2.1	1.4	...	0.1	1.3	1.5	1.6	2.6	5.2	5.2	9.7	1.5

[a]Less than .05%.

[b]The distribution of minerals is 100% to Group I during 1946-53.

Source: See Table 6.

Table 11. The proportion of ACP payments used for minerals and temporary practices, Utah (1946-63)

Year	Total Minerals (%)	Temporary Practices (%)
1963	(n)*	.2
1962	(a)	.1
1961	(a)	.1
1960	(a)	.1
1959	.1	.1
1958	.6	.2
1957	.7	.3
1956	.9	2.0
1955	.5	1.1
1954	1.0	.0
1953	5.0	10.5
1952	7.7	11.0
1951	6.0	11.4
1950	5.6	6.9
1949	9.6	8.4
1948	...	9.8
1947	10.1	17.7
1946	7.5	44.3

[a]Less than .05%.

*Data not available.

Source: See Table 7.

Another impact of the policy change of 1954 was a sharp decline in the relative share of funds going to minerals. The share declined from 5 percent in 1953 to 1 percent in 1954 and by 1960 was less than 0.05 percent. The continued low level of assistance for minerals indicated that the 1953-54 shift was probably due to the policy change rather than the drop in appropriations, since the share going for minerals continued to decline even after appropriations were restored in 1955. In 1947-48 the share going to minerals declined from 10.1 percent to nothing and then increased to 9.6 percent in 1949, when the cut in appropriations was restored. The appropriations cut helped reduce payments for minerals, but the change in policy was necessary to maintain the reduction.

Further analysis of specific practices indicates other shifts. First, the share of payments going to the combination of subgroups 6 and 9 declined rather sharply in 1953 from 10 to 4 percent and has flucturated between 6.1 and 2.8 percent ever since. As of 1954, the relative share of funds going to each subgroup has been around 2 percent, without a trend favoring either. In fact, in 1962 subgroup 9 had 1.5 percent while subgroup 6 had 2.4 percent, but in 1963 subgroup 6 had only 2.1 percent while subgroup 9's share rose to 2.7 percent. Similar fluctuations took place throughout the period following the change to package practices.

The other subgroups in Group II exhibited year to year fluctuations. Terraces and other erosion control devices fluctuated between highs of almost 8 percent in 1948 and 1956 to lows of around 2 percent in 1952 and 1961. The forestry practices never received more than 0.04 percent and practices for conserving livestock water never again approached their 1946 high of 5.8 percent, although they reached 3.1 percent in 1961 before declining to 1.4 percent by 1962. Group II declined due mainly to the drop in the share of payments going to permanent vegetative cover practices and a failure of any other subgroups to offset this decline.

None of the subgroups within Group III have maintained a share of ACP payments of even 2 percent. The only subgroup of any importance was competitive shrub control as its share fluctuaged between 1 and 3 percent and was 2.3 percent in 1963. All other subgroups with the exception of subgroup 18 have had less than 1 percent of the payments since 1959. Group III has fluctuated as different practices have been tried one or two years and then dropped. For example, subgroup 15, mulching and emergency tillage, used over 4 percent of the state ACP funds in 1948 and 1951 but used 0.1 percent or less every other year except 1946 and 1956. The share going to subgroup 14, additional vegetative cover, went from 0.3 percent in 1954 to 3.5 percent in 1957 and then back to 0.2 percent by 1960.

Returning to the discussion of Group I, payments for certain types of tillage practices, particularly those on summer fallow, were dropped after 1953; here was an apparent movement closer to program objectives as subgroup 4, discontinued practices, dropped from over 10 percent to zero. To use up the funds normally going for practices to protect summer fallow, irrigation practices had their share increased from 53 to 73 percent. While this is a 20 percent increase in the relative share of practices with enduring benefit, these are the types of practices farmers would undertake on their own, due to the high returns from increased production.

The reduced assistance going to minerals along with that in temporary practices, balanced out much of the increase in irrigation's share, thus the percentage of funds going to Group I did not increase 20 percent. By 1955 irrigation had reached 79.8 percent of the total ACP payments in Utah, but in 1956 cuts were made reducing its share to 67.1 percent. This cut was gradually restored and in the years 1960 and 1962 irrigation's share was almost 78 percent. These increases in irrigation and drainage practices seem to be a fairly common consequence of the 1954 policy change. Irrigation practices increased in California and Utah and drainage practices will be seen to increase in other states yet to be analyzed.

ACP in Utah appears not to have been greatly improved by the changes in national ACP policy. The proportion of ACP payments going to Group I practices increased, whereas those going to Group II practices declined (see Table 10). This is partly due to the types of practices most readily used by Western farmers. The practices having greatest benefit for the Utah farmer are production-increasing irrigation practices. And if the state wants to use up its funds, these are the kinds of practices to offer, as other practices are not often used by farmers. One alternative would be to pay as much as 75 to 80 percent of the cost for practices such as establishment of permanent vegetative cover. This would increase their use and provide a better outlet for ACP funds. Here the emphasis would be more on preserving land-use capacity for the future, rather than on increasing present production capacity with little regard for the future.

ACP in the other Mountain states shows similar high use of irrigation practices. In seven out of the eight Mountain states a very high percentage of ACP payments go to Group I practices while only a small percentage go to Group II. The major problem, however, in most of these Western states appears to be too large an ACP appropriation to be used without the irrigation practices or a substantial increase in cost-shares for other practices.

North Dakota

In the Great Plains, ACP stresses quite a different group of practices than in the Western states and no one group of practices receives primary emphasis. Since the Plains states cover such a wide variety of programs and conditions, they are divided into Southern and Northern Plains. First, ACP in North Dakota will be analyzed as representing the Northern Plains and then ACP in Texas is considered as representative of the Southern Plains.

One important characteristic that makes ACP in North Dakota quite unique is the heavy use of the temporary tillage practice, stubble mulching. In comparison, South Dakota is the only other state where a relatively high proportion of ACP funds is used for stubble mulching; but the 8 percent of ACP funds used in South Dakota does not even compare with the almost 50 percent used in North Dakota. ACP in North Dakota also appears to have undergone some rather major shifts following the change to a package practice policy. The share of payments going to Group I practices dropped from 55.4 percent in 1952 to 11.4 percent in 1954, while Group II increased from 3.3 to 6.8 percent and Group III's share almost doubled (see Table 12).

These apparent changes had little impact on the program; before 1954 protection of summer fallow had used over 40 percent of the ACP payments but when it was discontinued in 1954 payments were increased for stubble mulching. The

Table 12. ACP practices grouped by ability to fulfill objectives, North Dakota (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	8.4	10.1	7.3	10.2	7.1	13.6	5.5	6.5	8.6	11.4	50.2	55.4	60.7	63.6	61.8	70.1	79.2	85.0
1. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	2.7[b]	1.8	1.5	1.0	0.9	0.9	0.3	0.3
2. Drainage	3.1	5.8	3.1	7.0	4.1	10.6	4.0	5.3	6.9	9.8	3.1	4.0	2.6	2.6	3.8	2.5	4.1	3.4
3. Irrigation	1.0	1.3	0.8	1.0	0.4	0.6	0.5	0.2	0.2	0.2	0.1	(a)	0.1	0.1	...	...	0.1	(a)
4. Practices discontinued	...	...	...	...	...	...	...	...	0.1	0.3	43.4	48.5	55.3	58.8	55.4	65.3	71.0	80.2
5. Others	4.3	3.0	3.4	2.2	2.6	2.4	1.0	1.0	1.4	1.1	0.9	1.1	1.2	1.1	1.7	1.4	3.7	1.1
Group II	26.2	27.8	19.9	15.7	14.5	10.8	6.7	6.8	7.4	6.8	3.6	3.3	3.7	2.4	3.4	3.3	3.0	5.0
6. Perm. vegetative cover	4.1	6.0	0.8	0.7	0.5	0.5	0.4	0.8	2.2	0.5	...	...	...	...	...	...	...	...
7. Terraces & erosion control	0.9	0.8	0.9	1.2	0.4	0.4	0.4	0.2	0.2	0.3	0.1	0.1	0.2	0.1	0.1	0.1	(a)	0.1
8. Forestry	11.3	12.2	9.1	8.9	8.3	5.8	3.9	3.9	2.9	4.0	2.2	2.3	2.3	1.0	0.8	0.9	0.5	0.4
9. Improving veg. cover	...	...	...	...	...	...	...	(a)	...	...	0.2	0.2	0.5	0.4	0.8	1.4	0.9	1.4
11. Conserv. livestock water	9.9	8.8	9.1	4.9	5.3	4.1	2.0	1.9	2.1	2.0	1.1	0.7	0.7	0.9	1.7	0.9	1.6	3.1
Group III	65.4	62.1	72.8	74.1	78.4	75.6	87.8	86.7	84.0	81.8	46.2	41.3	35.6	34.0	34.8	26.6	17.8	10.0
13. Gr. manure & temp. cover	7.2	4.4	4.0	4.3	4.7	7.4	3.6	2.7	1.2	0.6	4.6	3.9	1.3	1.7	2.5	3.0	0.2	0.4
14. Add. legumes & grasses	7.8	12.8	14.4	19.6	23.2	15.7	34.8	35.4	29.8	18.9	12.0	9.6	14.8	15.1	...	...	...	....
15. Mulch. & emergency tillage	48.9	42.6	51.5	46.4	47.1	47.7	45.6	43.6	46.8	48.7	11.3	10.1	6.3	5.5	10.8	5.4	4.8	0.2
16. Stripcrop. & contour. orch.	1.3	2.1	2.9	3.8	3.4	4.8	3.8	5.0	6.2	13.6	18.3	17.7	13.2	11.7	12.6	18.2	9.4	9.4
17. Competitive shrub control	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
18. Others	0.2	0.2	...	...	...	...	...	...	...	...	...	...	...	(a)	8.9	(a)	3.4	...

[a]Less than .05%.

[b]The distribution of minerals is 100% to Group I during 1946-53.

Source: See Table 6.

major impact of the package practice approach was a shift of funds from the protection of summer fallow to stubble mulching. This shift first appeared as a major alteration but turned out to be only minor.

Besides the shift of funds to stubble mulching, a few other practices showed important changes during 1946-63. For example, the drainage practices increased their relative share of payments from 3.1 to 9.8 percent during 1953-54 and then fluctuated between 10 and 3 percent. The share of payments for fertilizers dropped from 2.7 percent in 1953 to zero from 1954-62 (see Table 13). Only two practice subgroups have shown a continual trend: (1) forestry and (2) conservation of livestock water. The increase in forestry practices' share of funds started back as far as 1946, but in the middle fifties the rate seemed to accelerate. The biggest increases came in 1959 and 1962 as the proportion of payments went from 2.2 percent in 1953 to 12.2 percent in 1962.

The share of ACP payments going to practices for conserving livestock water increased slightly in 1953-54, but major increases came in 1957-58 and 1960-61. Their share went from 2 percent in 1957 to 9.1 percent in 1961 and was 9.9 percent by 1963. Thus, subgroups 8 and 11 have accounted for most of the increase in payments going to practices best fulfilling program objectives which increased from 3.6 percent in 1953 to over 26.2 percent in 1963. One other

Table 13. The proportion of ACP payments used for minerals and temporary practices, North Dakota (1946-63)

Year	Total Minerals (%)	Temporary Practices (%)
1963	(n)*	56.1
1962	.0	47.1
1961	.0	55.5
1960	.0	50.7
1959	.0	51.8
1958	.0	55.1
1957	.0	49.2
1956	.0	46.3
1955	.0	48.1
1954	.0	49.6
1953	2.7	59.2
1952	1.8	62.4
1951	1.5	63.0
1950	1.0	66.0
1949	.9	68.7
1948	.9	73.7
1947	.3	76.2
1946	.3	80.1

*Data not available.

Source: See Table 7.

subgroup of practices has accelerated this increase in Group II practices; the establishment of permanent vegetative cover practices jumped from less than 1 percent in 1961 to over 6 percent in 1962. During the same period, payments for Group II practices went from 19.9 to 27.8 percent.

With the exception of mulching and emergency tillage, which increased from 11.3 percent in 1953 to 48.7 percent in 1954, the subgroups in Group III have only shown temporary changes. For example, the share of ACP funds going to green manure and other temporary cover practices declined from 4.6 percent in 1953 to less than 1 percent in 1954 but has been between 4 to 7 percent since 1958. On the other hand, practices for increasing legumes and grasses, subgroup 14, started an upward trend in 1953-54 that was not reversed until 1958 as its share went from 9.6 percent in 1952 to 35.4 percent in 1956 but dropped to only 8 percent by 1963. Finally, subgroup 15, stripcropping, fluctuated between 9.4 and 18.3 percent during 1946-54 before declining from a high in 1953 to only 1.3 percent in 1963.

North Dakota is another state where the transition to a package practice approach was made with only a few program changes. Temporary practices decreased more between 1946 and 1952 than they did between 1953 and 1963. In fact, the share of payments going to temporary practices in 1953 was 59.2 percent as compared to 56.1 percent in 1963 and

during 1946-53 they declined from 80.1 to 59.2 percent (see Table 13). The major proportion of these temporary practices was stubble mulching from 1954-63 and protection of summer fallow before 1954.

Even though ACP in North Dakota has increased Group II practices and Group I practices account for less than 10 percent of the payments, the question must be asked as to whether stubble mulching should be subsidized to its present extent. Also, is stubble mulching any less an established or normal practice than protection of summer fallow and would it be used without assistance? With less than 9 percent of the ACP funds in the other Plains states being spent on stubble mulching, there is good reason to suspect that too much is being spent on this practice in North Dakota. Possibly, ACP should restrict the use of stubble mulching by either limiting the number of times a farmer could receive payments or reducing the cost-share rate.

Such restrictions would most likely not reduce the total use of stubble mulching and would make more funds available for other practices that better fulfill program objectives. With these additional funds, ACP in North Dakota could emphasize such practices as terracing, sod waterways or dams for livestock water, much as is done in South Dakota, Nebraska and Kansas. In 1963 over 34 percent of the ACP payments in these three Plains states were used to promote the above three practices.

Texas

When considering the percentage distribution of ACP funds in Texas, note that twice as much money is appropriated to Texas as to any other state. In 1963 over 20 million dollars was allocated to Texas as compared to only a little over 9 million to second place Iowa. Thus, one may be justified in concluding that ACP is at least twice as important in Texas as compared to any other state.

The first impression of ACP in Texas is that little change has taken place since 1946 (see Table 14). Nineteen and four-tenths percent of the payments were allocated to Group I in 1946 and 22 percent in 1963. Group II received 32.5 percent in 1946 as compared to 35.3 percent in 1963, while Group III dropped from 48.1 to 42.7 percent. A comparison of the average share of payments going to each group during 1946-52, 1954-60 and 1961-63 indicates that some general changes have occurred. First, the average sharing going to Group I practices has gone from 16.9 percent in 1946-52 to 20.3 percent in 1954-60 and to 22.1 percent in 1961-63. Second, Group II's share of payments went from 35.3 to 25.7 percent and then to 31.8 percent, whereas Group III went in the opposite direction from 47.8 to 54 percent and to 46.1 percent. This further indicates that the changes during the fifties moved the program further away from its objectives, although the trend was somewhat revised during the sixties.

Table 14. ACP practices grouped by ability to fulfill objectives, Texas (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	22.0	23.0	21.3	19.9	22.2	19.5	20.2	23.4	20.5	16.2	18.7	16.6	16.0	15.4	18.1	17.8	15.1	19.4
1. Lime and other minerals	3.9	4.8	3.8	3.5	3.2	3.3	1.9	1.4	0.4	0.2	4.7	4.5	4.5	4.4	5.9	7.7	3.5	3.4
2. Drainage	0.5	0.7	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.4	0.3	0.5	1.2	1.1	1.5	0.7	0.7	0.8
3. Irrigation	13.3	14.0	13.8	12.4	14.7	12.7	14.8	17.6	15.3	11.9	8.4	6.4	4.7	3.3	3.7	2.4	1.8	1.5
4. Practices discontinued	0.8	(a)	0.1	0.1	0.1	...	...	...	0.9	0.6	1.3	0.5	1.1	2.3	3.2	5.3	2.6	6.6
5. Others	3.5	3.5	2.8	3.2	3.6	3.0	3.1	4.1	3.6	3.1	4.0	4.7	4.5	4.3	3.8	1.7	6.5	7.1
Group II	35.3	32.6	27.4	26.3	28.3	27.6	22.9	27.4	23.2	24.0	28.1	28.5	36.9	33.0	40.2	39.3	36.6	32.5
6. Perm. vegetative cover	13.7	12.0	7.7	6.1	7.5	3.9	2.6	1.9	1.3	1.4	(a)	0.2	0.3	0.3	0.5	0.3	(a)	0.3
7. Terraces & erosion control	3.0	4.6	5.0	5.1	5.2	8.2	6.3	8.5	6.1	7.3	6.4	6.6	7.3	11.0	15.3	17.5	11.6	8.4
8. Forestry	0.2	0.4	0.6	0.7	0.7	0.9	0.6	0.4	0.4	0.6	0.4	0.1	0.2	0.2	0.1	(a)	(a)	(a)
9. Improving veg. cover	9.7	8.2	7.4	7.3	7.2	7.3	6.1	4.5	5.9	2.2	7.3	6.4	9.2	8.2	7.5	5.6	12.7	8.3
10. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	4.7[b]	4.5	4.4	4.4	5.9	7.7	3.5	3.4
11. Conserv. livestock water	8.7	7.4	6.7	7.1	7.7	7.3	7.3	12.1	9.5	12.5	9.3	10.7	15.5	8.9	10.9	8.2	8.8	12.1
Group III	42.7	44.4	51.3	53.8	49.5	52.9	56.9	49.2	56.3	59.8	53.2	54.9	47.1	51.6	41.7	42.9	48.3	48.1
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	9.5	9.1	8.9	8.8	11.9	15.4	7.0	6.7
13. Gr. manure & temp. cover	9.3	9.6	14.1	16.4	10.1	17.1	19.8	18.0	23.5	37.1	10.5	18.2	11.0	14.2	9.2	8.9	13.0	9.6
14. Add. legumes & grasses	0.3	0.9	1.1	2.9	3.4	4.3	3.2	2.3	2.2	2.1	0.6	0.5	0.7	0.4	...	...	...	...
15. Mulch. & emergency tillage	9.3	9.5	10.6	9.7	10.0	9.6	11.6	9.6	12.6	3.6	8.8	10.8	7.2	5.6	6.6	7.3	12.1	15.7
16. Stripcrop. & contour. orch.	(a)	...	(a)	(a)	(a)	(a)	0.1	0.1	0.1	0.3	0.1	(a)	...	...	0.1	0.1	...	0.2
17. Competitive shrub control	22.2	22.7	23.8	22.3	21.6	16.3	14.1	13.6	14.3	14.6	17.4	15.5	14.5	13.8	10.1	9.2	13.7	14.7
18. Others	1.6	1.7	1.7	2.5	4.4	5.6	8.1	5.6	3.6	2.1	6.3	0.8	4.8	8.8	3.8	2.0	2.5	1.2

[a]Less than .05%.

[b]The distribution of minerals from 1946-53 is 25% to Group I and II and 50% to Group III.

Source: See Table 6.

The share of payments going to temporary practices was not reduced much until 1959 and 1962 as their share was 30.1 percent in 1953 and 31.4 percent in 1957. The 1954 policy change did not prevent their share from rising to 41.3 percent in 1954 (see Table 15). Also, the use of minerals tended to increase during the fifties and sixties, particularly lime. The share of payments going to minerals was between 17 and 19 percent during the early fifties but had risen to around 22 percent in the sixties. The proportion of funds going for lime increased from 1 percent in 1953 to 3.9 percent in 1962 and accounted for most of the rise in minerals' share, althought fertilizers' share was up slightly.

Only a few subgroups have had an increase in relative importance. Irrigation practices started an upward trend in 1946 that raised their relative share of ACP funds in Texas from 1.5 percent to a peak of 17.6 percent in 1956, after which its share declined to between 12 and 15 percent. The irrigation practices account for a large part of the Group I practices and were the main reason for the increases during the fifties and sixties. The payments used for mineral practices accounted for less than 4 percent of the total in 1963 and drainage's share was only 0.5 percent, which was a little below its high of 1.2 percent in 1951.

Table 15. The proportion of ACP payments used for minerals and temporary practices, Texas (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	19.4
1962	21.6	3.9	17.7	19.1
1961	22.2	2.9	19.3	24.7
1960	23.1	2.9	20.2	26.1
1959	17.9	2.6	15.3	20.1
1958	21.7	2.9	18.8	26.8
1957	19.8	1.8	18.0	31.4
1956	16.2	1.7	14.5	27.6
1955	19.2	1.2	18.0	37.0
1954	22.4	.7	21.7	41.3
1953	18.9	1.0	17.9	30.1
1952	18.1	1.7	16.4	38.5
1951	17.8	1.5	16.3	28.2
1950	17.5	.8	16.7	30.9
1949	23.7	.9	22.8	30.9
1948	30.8	1.3	29.5	37.0
1947	14.0	.7	13.3	34.7
1946	13.4	1.3	12.1	38.7

*Data not available.

Source: See Table 7.

The payments going to permanent vegetative cover practices, subgroups 6, 9 and 10 declined from 12 to 3.6 percent in 1953-54, before beginning an upward trend. This trend carried these practices on a steady climb until 1963 when their share reached 23.4 percent, of which 13.7 percent went to subgroup 6 and 9.7 percent went to subgroup 9. The larger share used for permanent vegetation was probably accelerated by the specific emphasis on permanent vegetation as a program objective. However, some of the other federal land retirement and acreage restricting programs may have as much to do with the increase in permanent vegetative cover as does ACP.

These increases in the proportion of payments going to irrigation and permanent vegetative cover practices were accompanied by decreases in green manure and other temporary cover practices, subgroup 13, as their share declined from 37.1 percent in 1954 to 9.3 percent in 1963. There also appears to be a trend towards reducing the proportion of funds going to subgroup 7, erosion control devices. From 1958's high of 8.2 percent, subgroup 7's share has steadily decreased until it was only 3 percent in 1963.

Group II has changed primarily in response to the decline and then increase of permanent vegetative cover practices and terracing and other erosion control practices. The forestry practices share of less than 1 percent had very

little influence, while conserving livestock water, subgroup 11, fluctuated from a high of 15.5 percent in 1951 to 6.7 percent in 1961.

The largest proportion of ACP funds, 45 percent, goes to Group III practices and more than one-half of Group III funds is used to control competitive shrubs. This practice has generally increased since 1956, when its share was only 13.6 percent, until it reached over 22 percent in the sixties. Such an increase should be looked at very closely, because this is one of the practices that may be carried out without any assistance. It may also bring new land into production while the conservation benefits to society may not be very large relative to costs. Under proper restriction this practice may meet the program objectives, but under general use it could well become a Group I practice. In no other state did ACP spend more than 7 percent of its funds on control of competitive shrubs. And in Texas, ACP spent over 4 million dollars on competitive shrub control, which exceeds the total funds allocated to 26 different states in 1963.

The two other major subgroups in Group III tended to increase their share of payments in the middle fifties and then decline. Subgroup 14, additional legumes and grass, reached its top share of 4.3 percent in 1958 before dropping to 0.3 percent in 1963 and subgroup 15, mulching and emergency tillage, reached 11.6 percent in 1957 and declined

to 9.3 percent by 1963. The declines in subgroups 13, 14 and 15 counterbalanced the increases in subgroup 17, making Group III fairly stable.

In summary, ACP in the Plains states as compared to the program in the Western states is using a much lower proportion of payments for Group I practices. But in North Dakota, too high a proportion of payments is used on stubble mulching, while in Texas too much goes for control of competitive shrubs. Even so, ACP in the Plains states seems to be closer to meeting program objectives than it is in the Western states.

Iowa

The program in Iowa was substantially changed by the package practice policy, as during 1953-54 the proportion of ACP funds going to Group II practices increased fourfold while Group III practices' share decreased threefold (see Table 16). In 1953 Group II amounted to only 6 percent of total ACP payments but by 1954 its share had sky rocketed to 27.4 percent. This is compared with the downward plunge of Group III practices from 29.9 percent to only 9.1 percent. On the other hand, the share going to Group I practices stayed fairly constant until 1955-57, when it dropped from 61.8 to 44.7 percent.

Table 16. ACP practices grouped by ability to fulfill objectives, Iowa (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	47.0	46.1	37.1	55.9	48.0	45.3	44.7	54.3	61.8	63.5	64.1	62.6	56.4	49.3	62.1	62.6	63.1	66.3
1. Lime and other minerals	18.2	11.4	11.0	19.4	21.2	28.5	21.8	21.1	34.6	37.9	45.7[b]	54.4	51.3	45.4	52.3	51.0	55.3	52.5
2. Drainage	26.0	32.2	23.6	33.0	22.8	16.8	9.6	13.2	27.2	25.6	17.2	7.7	5.0	3.8	7.4	8.5	5.9	5.4
3. Irrigation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Practices discontinued	...	...	...	...	...	...	...	...	...	...	1.2	0.5	0.1	0.1	2.4	3.1	1.9	8.4
5. Others	2.8	2.5	2.5	3.5	4.0	(c)	13.3	20.0	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Group II	32.4	26.9	22.2	36.8	45.2	46.1	28.7	31.2	29.7	27.4	6.0	5.6	6.5	8.3	8.8	8.3	7.3	5.4
6. Perm. vegetative cover	4.0	2.7	3.0	2.8	2.5	3.7	7.5	6.8	5.0	1.4	...	...	...	...	...	...	...	...
7. Terraces & erosion control	20.7	19.1	15.4	28.0	34.0	31.2	14.9	16.4	16.1	17.8	4.4	4.3	4.6	5.7	6.7	6.8	5.8	3.3
8. Forestry	0.5	0.4	0.4	0.4	0.8	0.4	0.2	0.1	0.1	0.2	(a)	(a)	(a)	(a)	(a)	...	(a)	(a)
9. Improving veg. cover	1.8	0.3	0.2	0.3	0.3	0.2	0.6	1.7	1.5	1.8	0.5	0.5	0.5	1.3	1.1	0.9	0.7	0.9
11. Conserv. livestock water	5.4	4.4	3.2	5.3	7.6	10.6	5.5	6.2	7.0	6.2	1.1	0.8	1.4	1.3	1.0	0.6	0.8	1.2
Group III	20.6	27.0	40.7	7.3	6.8	8.6	26.6	14.5	8.5	9.1	29.9	31.8	37.1	42.4	29.1	29.1	29.6	28.3
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13. Gr. manure temp. cover	16.4	23.1	35.7	1.1	0.5	7.1	19.0	4.2	1.3	0.1	14.9	15.0	19.8	14.8	15.4	20.0	17.8	17.3
14. Add. legumes & grasses	0.1	0.1	0.3	0.6	0.1	...	2.7	4.2	...	...	2.2	4.8	5.2	19.1	...	...	...	...
15. Mulch. & emergency tillage	1.8	1.8	2.2	2.4	3.7	1.2	2.1	3.1	3.3	6.4	12.5	11.8	11.8	8.3	10.9	8.2	10.8	10.7
16. Stripcrop. & contour. orch.	0.8	0.5	0.6	0.8	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.4	0.3
17. Competitive shrub control	1.3	1.4	1.9	2.4	2.1	...	2.5	2.6	3.5	2.3	...	...	...	(a)	0.1	...	...	...
18. Others	0.2	0.1	...	...	...	...	...	...	...	...	...	...	...	...	2.5	0.6	0.6	...

[a]Less than .05%.

[b]The distribution of minerals from 1946-53 is 100% to Group I.

[c]Fencing and hedgerow removal not separated out and B-5 not used.

Source: See Table 6.

Further changes occurred in 1961, as Group III's portion of ACP payments went from 7.3 to 40.7 percent in one year, however, this large increase was followed by a decrease to 27 percent and then to 20.6 percent by 1963. In line with these important changes, the amount of funds going to temporary practices dropped sharply from 28.5 percent in 1953 to only 6.4 percent in 1954 and then jumped from 3.6 to 37.9 percent in 1960-61 (see Table 17). These changes in the share going to temporary practices were due principally to fluctuations in the proportion of funds used by green manure and other temporary cover practices, subgroup 13. Their share went from 14.9 percent in 1953 to 0.1 percent in 1954, before rising from 1.1 to 35.7 percent in 1960-61.

Another important alteration occurred in the proportion of payments used for minerals as its share fell from 54.4 percent in 1952 to only 13.3 percent by 1963. Even more important, was the change in relative sharing going for fertilizers and lime. Lime's share increased in 1953-54 from 19.6 to 39.7 percent and then declined to 11.6 percent by 1961. This is compared to fertilizer's share that fell from 26.1 percent to only 1 percent in 1953-54 and has remained near this low level through 1962.

Table 17. The proportion of ACP payments used for minerals and temporary practices, Iowa (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	18.2
1962	13.3	12.1	1.2	24.9
1961	13.2	11.6	1.6	37.9
1960	21.5	20.1	1.4	3.6
1959	23.1	21.8	1.3	4.2
1958	31.2	29.6	1.6	8.2
1957	26.3	23.3	3.0	21.1
1956	26.6	23.1	3.5	7.3
1955	37.5	35.4	2.1	4.7
1954	39.7	38.7	1.0	6.4
1953	45.7	19.6	26.1	28.5
1952	54.4	29.9	24.5	27.3
1951	51.3	27.8	23.5	31.7
1950	45.4	28.3	17.1	23.1
1949	52.3	32.9	19.4	28.7
1948	51.0	36.4	14.6	31.3
1947	55.3	43.4	11.9	30.4
1946	52.5	40.5	12.0	36.7

*Data not available.

Source: See Table 7.

ACP in some of the other Midwestern states did not follow this example. The 1962 programs in both Missouri and Illinois used over 28 percent of the payments on fertilizers, while over 71 percent went for all minerals. Only in Illinois and Missouri does ACP still spend large sums on rock or collodial phosphate subsidies. During 1963 ACP in Illinois spent over 21 percent of its funds or 1.6 million dollars on rock phosphate, while in Missouri ACP used 15 percent or 1.3 million dollars. Yet for ACP in Illinois, this is a substantial reduction from the 38 percent in 1955 and the over 50 percent in 1953.

Returning to ACP in Iowa, other important changes become apparent upon analysis of specific subgroups. The increase of three subgroups within Group II brought about initial increases. In 1954-55 permanent vegetative cover practices' portion of payments went from 1.4 to 5 percent and has remained near this level through 1963. Subgroup 7, terraces and other erosion control, also increased but the first increase came in 1953-54 when its share went from 4.4 to 17.8 percent. The second increase occurred in 1957-58 as its relative share went from 14.9 to 31.2 percent, however, by 1963 it had declined to 20.7 percent. Practices for the conservation of livestock water constituted the other subgroup to increase as its share jumped from the 1 percent level of 1946-53 to 6.2 percent in 1954 and fluctuated around

this level through 1963. Thus, subgroups 6, 7 and 11 contributed most to Group II's increased share while subgroups 8 and 9's increases in the middle fifties have had very little influence, because their combined share has never exceeded the 1963 high or 2.3 percent.

In contrast, Group I was fairly stable, although changes did occur among its subgroups, as the drainage practice increases were enough to balance out the decline in minerals. For example, after running along at a share of 4 to 9 percent from 1946 to 1952, the portion of payments used for drainage took a jump from 7.7 to 17.2 percent in 1952-53. This original rise was followed by another that brought drainage's share to 27.2 percent before it declined to 9.6 percent by 1957. Since then, drainage's share of ACP funds steadily increased to 33 percent in 1960 but dropped back to 26 percent by 1963. The proportion of funds going for mineral practices, on the other hand, declined from 54.4 percent in 1952 to 21.1 percent by 1956 and was only 18.2 percent in 1963. Group I's share, therefore, was maintained near 60 percent until 1956 and since then has fluctuated around 45 percent.

Group III's share has fluctuated even more than Group I and this is due for the most part to the green manure and other temporary cover practices, though another important change did take place. The portion of payments used for subgroup 15, mulching and emergency tillage, had a sharp drop

from 12.5 to 2.1 percent during 1953-57 and has since remained near 2 percent. The decline in mulching and emergency tillage practices appears to be in line with the primary objective of enduring practices as was the initial decline in temporary cover practices; however, the same cannot be said for the recent increases in temporary cover. The other three subgroups have been of little importance since 1957, although the share spent on competitive shrub control has been near 2 percent while subgroup 14's share was 19.1 percent in 1950 as compared to only 0.1 percent in 1963.

In the final analysis, 47 percent of the ACP funds spent in Iowa still go to practices that least fulfill objectives, while the permanent vegetative cover practices of Group II account for only 3 to 6 percent. As in most of the Midwestern states, a high percentage of payments is used for drainage. Yet, improvements did occur during the fifties, though some were lost in the sixties when the impact of the package practice policy seemed to wear off.

Michigan

ACP in Michigan will be fairly representative of the Lake states, and many practices are similar to those in the Midwestern states. For example, the program in Michigan during the middle fifties appears to have made many of the same general changes as that in Iowa (see Tables 18 and 19). First, the proportion of ACP payments for Group III practices fell from 35 to 6.4 percent during 1953-54 before rising to 24.9 percent by 1963,due to the new wildlife practices and an increase in the temporary cover practices.

Increases in both Group I and II practices made up for the 1953-54 decline in payments to Group III practices. Group I's share went from 62.8 to 81.9 percent in 1953-54 and then dropped back to 73 percent by 1956. A 73 to 75 percent level was maintained until 1961 when it declined to 63 percent followed the next year by a drop to 54 percent. These latter declines appear to be the result of an effort by the State Development Group to decrease the proportion of funds going for drainage. Group II practices also had their most significant increase in 1953-54 as their share of funds rose from 2.2 to 11.7 percent. Then in 1955-56 they increased from 10.1 to 14.1 percent and maintained this level until 1961 when they jumped to 18.2 percent and then to 21.7 percent. Here again,these latter increases were probably a side effect of the State Development Group's

Table 18. ACP practices grouped by ability to fulfill objectives, Michigan (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	54.9	54.4	62.7	73.0	72.9	74.2	74.5	73.0	79.7	81.9	62.8	59.2	57.3	55.5	63.4	68.2	71.1	73.9
1. Lime and other minerals	20.1	17.4	19.4	21.6	23.7	24.4	26.9	29.4	31.7	38.3	43.2	38.9	35.4	35.0	40.2	35.5	43.2	41.5
2. Drainage	32.8	35.8	41.0	49.3	46.1	47.5	42.9	41.9	47.8	43.4	13.6	15.3	16.4	12.9	18.7	25.0	12.7	12.2
3. Irrigation	1.5	0.8	1.1	1.2	2.2	2.3	4.7	1.7	0.2	0.2	...	...	...	...	...	...	...	...
4. Practices discontinued	...	...	...	...	...	...	...	...	...	...	6.0	5.0	5.5	7.6	4.5	7.7	15.2	20.2
5. Others	0.5	0.4	1.2	0.9	0.9	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	...	...	...
Group II	20.2	21.7	18.2	14.1	15.3	12.8	15.0	14.1	10.1	11.7	2.2	1.9	2.4	1.9	2.9	3.0	1.6	0.7
6. Perm. vegetative cover	12.2	12.5	7.5	3.8	5.3	3.1	2.9	4.9	3.0	6.0	...	(a)	(a)	(a)	0.1	0.1	(a)	...
7. Terraces & erosion control	1.9	2.2	2.4	2.8	2.8	3.1	2.8	1.9	1.4	1.4	0.2	0.1	0.3	0.1	0.2	0.1	0.1	(a)
8. Forestry	4.8	5.5	6.4	6.0	4.9	3.7	5.1	4.7	3.3	4.3	1.4	1.3	1.5	1.0	0.9	0.9	0.6	0.4
9. Improving veg. cover	0.8	1.1	1.2	0.8	1.3	1.5	1.8	2.6	2.4	...	0.6	0.5	0.6	0.8	1.7	1.9	0.9	0.3
11. Conserv. livestock water	0.5	0.4	0.7	0.7	1.0	1.4	2.4	...	...	...	...	...	...	...	...	...	...	...
Group III	24.9	23.9	19.1	12.9	11.8	13.0	10.5	12.9	10.2	6.4	35.0	38.9	40.3	42.6	33.7	28.8	27.3	25.4
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	14.3[c]	12.9	11.8	11.7	13.4	11.8	14.4	13.8
13. Gr. manure & temp. cover	17.5	17.3	17.7	11.9	10.6	11.5	8.3	11.1	8.6	2.0	18.4	20.2	19.9	19.2	17.9	16.2	10.4	8.7
14. Add. legumes & grasses	0.7	0.4	0.4	0.2	0.3	0.5	0.8	0.9	0.5	...	...	3.8	7.1	10.0	...	...	...	...
15. Mulch. & emergency tillage	...	...	...	...	...	...	...	...	...	...	2.1	1.8	1.2	1.3	2.1	0.2	1.2	2.9
16. Stripcrop. & contour. orch.	0.7	0.7	0.9	0.8	0.9	1.0	1.4	0.8	1.0	2.0	0.2	0.2	0.3	0.4	0.3	...	0.1	(a)
17. Competitive shrub control	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. Others	6.0	5.5	0.1	(a)	(a)	(a)	(a)	0.1	0.1	2.4	...	...	...	...	...	0.6	1.2	...

[a]Less than .05%.

[b]Not separated out in statistics.

[c]Minerals are distributed 75% to Group I and 25% to Group III during 1946-53.

Source: See Table 6.

Table 19. The proportion of ACP payments used for minerals and temporary practices, Michigan (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	17.5
1962	33.8	20.9	12.9	17.4
1961	34.7	22.2	12.5	17.7
1960	31.4	22.8	8.6	11.9
1959	34.1	25.3	8.8	10.6
1958	35.6	25.5	10.1	11.5
1957	36.7	28.0	8.7	8.3
1956	44.0	30.9	13.1	11.1
1955	41.9	32.8	9.1	8.6
1954	43.9	39.8	4.1	2.0
1953	57.6	20.0	37.6	40.8
1952	51.8	16.8	35.0	39.9
1951	47.2	15.3	31.9	38.3
1950	46.6	13.9	32.7	39.7
1949	53.6	20.1	33.5	37.9
1948	47.3	24.0	23.3	35.9
1947	57.6	26.6	31.0	41.3
1946	55.3	25.8	29.5	45.6

*Data not available.

Source: See Table 7.

efforts to reduce drainage, for payments were shifted to other practices.

The proportion of payments used for temporary practices appeared to be affected by the change to a package practice policy. Here the portion of funds dropped from a 40 percent level, that had been maintained from 1946-53, to only 2 percent in 1954. Their share has since then increased to 8.6 percent in 1955 and to over 17 percent for 1961-63. The original reduction in temporary practices was probably caused by an attempt to meet the enduring benefit objective and the funds not used for temporary practices went to lime and drainage practices. This policy was somewhat changed in 1961 when more emphasis was placed on temporary practices and less on practices such as drainage and liming, that bring about immediate increases in crop production.

Table 19 indicates the effect of the policy change on the relative share of ACP payments going for minerals. First, the total share going for all minerals declined from 57.6 to 43.9 percent in 1953-54 and continued to decline until it reached 31.4 percent in 1960. The real change, however, came in the relative shares going to lime and fertilizers. Here the share going to fertilizers decreased from 37.6 percent in 1953 to only 4.1 percent in 1954 while the share used for liming went from 20 percent to almost 40 percent. The increase in the share going to lime started

in 1950, but the policy change accelerated the increase for one year. Since the peak share in 1954, lime has steadily declined and was only 20.9 percent in 1963. The fertilizer materials, on the other hand, had increased their relative share to 12.9 percent by 1963. The decline in payments going for fertilizers brought about the initial decrease in minerals, but after 1954 decreases in the share of payments used for liming have been the major cause of minerals' declining share.

Now, turning the discussion to specific subgroups within Group II, all are found to have increased their portion of funds during the middle fifteis. Permanent vegetative cover practices, subgroups 6 and 9, went from a 0.6 to 6 percent during 1953-54 and maintained this share until 1960. Further increases in 1961 brought their share to 8.7 percent and then to 13 percent during 1962-63. These increases were due primarily to subgroup 6, as subgroup 9 had actually declined from 2.6 percent in 1956 to less than 1 percent by 1963.

The forestry practices increased their proportion of funds from 1.4 to 4.3 percent during 1953-54 and the share fluctuated around 5 percent thereafter. Among these fluctuations, was an increase from 3.3 to 4.7 percent in 1956 that may have been due to an increase in cost-share rates from 50 to 75 percent. A further increase from 4.9 to 6 percent

in 1960 may have been stimulated by the increased cost-share rates to 80 percent on improvement of tree stands.

Subgroup 7, terraces and other erosion controls, also made increases in 1953-54 and 1956-57 that brought its share from 0.2 to 3.1 percent before declining to a 1.9 percent in 1963. The other subgroup, 11, conserving livestock water went from nothing to a share of 2.4 percent during 1956-57, before declining to less than 0.5 percent by 1963. Thus, the practices for establishing permanent vegetative cover, which doubled their share of ACP payments in the past decade, have been the major reason for Group II's continued increase.

Similarly, the major subgroup in the Group III practices is green manure and other temporary cover practices, subgroup 13. The reduction in this subgroup's portion of funds brought about the decreases in temporary practices and if the minerals allocated to Group III during 1946-53 are combined with subgroup 13, their decline from over 32.7 percent to only 2 percent accounts for the 1953-54 decline in Group III's share. Then, in 1961-63 subgroup 13's increased share of from 11.9 to 17.7 percent helped increase Group III to its new level of 24.9 percent. On the other hand, decreases in subgroup 15, mulching and emergency tillage, from 2.1 percent to nothing during 1953-54 was balanced out by the increase in subgroup 16, stripcropping and contouring orchards.

The only other practices that are of any importance in Group III are the wildlife practices that caused subgroup 18's proportion of payments to go from almost nothing to 6 percent during 1961-63. These latter practices may prove a good use of ACP funds in some states, such as Michigan, and thus merit watching. At present, however, the only practices receiving a share of over 0.5 percent are wildlife ponds that in 1963 accounted for over 5 percent of the state ACP expenditures.

Returning now to Group I, the two major subgroups within it, drainage and minerals, have already been mentioned, but further discussions of their changes will bring out some important points. First, and most important, the share going for drainage practices increased from 13.6 to 43.4 percent during 1953-54 and up until 1962 it continued at over 40 percent. The efforts to decrease the share going to drainage practices did not really become effective until the sixties when it declined from 49.3 percent in 1960 to 32.8 percent in 1963. This decline in the proportion of funds used for drainage practices and minerals, finally reduced Group I's share to 54.9 percent in 1963. Before 1960, the high share going to drainage practices kept Group I's portion near 75 percent, even in the face of the decreased proportion going for minerals.

Here again, like many of the other states analyzed, one of the first effects of the 1954 change in policy was an increase in drainage and/or irrigation practices, along with the decline in temporary practices. This shift of payments from fertilizer to lime, along with increases in permanent vegetative cover and forestry practices, seemed to round out the major effects of policy change.

In comparison with ACP in other Lake and Midwestern states, the proportion of payments going for drainage practices was higher in Michigan than any other state in the Union during 1963, and only in Iowa was more spent in total. In Ohio, Indiana, Iowa and Minnesota 25 percent or more of the ACP funds went for drainage practices which amounted to from 1.3 to 2.3 million dollars per state. On the other hand, in Illinois and Wisconsin ACP expenditures on drainage practices were kept below 10 percent or half a million dollars. These states where ACP expenditures were low on drainage practices tended to have a higher proportion of ACP funds used for mineral practices; this was especially evident in Illinois. Thus, ACP in the Midwestern and Lake states tends to be characterized by a high proportion of practices that increase present crop production. The proportion, however, is generally not quite as high as in the Western states.

New York

Probably the most striking feature of ACP in New York is the very high percentage of funds going for minerals. The distribution ranges from the high in 1951 of 88.2 percent to the low in 1956 of 65.6 percent, and since 1951 the lime component of the minerals has received the largest share (see Table 20). The policy change of 1954 brought about a reduction from 27.7 to 6.6 percent in the share going for fertilizers, while the share used for liming materials went from 55.1 to 66.6 percent. Lime's portion has ranged from 36.9 percent in 1950 to 67.4 percent in 1961, while fertilizers' share has ranged from 6.6 percent in 1954 to 46.3 percent in 1950. The package practice approach seems to have had some fairly major impacts on the distribution of funds for mineral using practices.

The policy change also affected the distribution of funds among the three groups of practices (see Table 21). Group I practices have had the major share of funds, 70 percent or more, with the exception of 1954-58 when a large proportion of the minerals were used on the permanent vegetative cover practices. The middle fifties saw a decrease in the proportion of payments used for Group I practices from 93 percent in 1953 to only 23.8 percent in 1956. But beginning in 1957, this trend was reversed and by 1961 their share was almost 80 percent.

Table 20. The proportion of ACP payments used for minerals and temporary practices, New York (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	3.0
1962	72.9	65.4	7.5	2.5
1961	74.5	67.4	7.1	2.6
1960	71.1	60.4	10.7	2.7
1959	71.9	61.7	10.2	2.1
1958	73.2	59.2	14.0	1.9
1957	67.5	44.1	23.4	1.8
1956	65.6	42.9	22.7	2.0
1955	70.1	54.3	15.8	2.8
1954	73.2	66.6	6.6	.3
1953	82.8	55.1	27.7	8.9
1952	85.4	54.1	31.3	8.2
1951	88.2	51.5	36.7	6.4
1950	83.2	36.9	46.3	9.0
1949	81.1	40.6	40.5	8.2
1948	73.5	39.2	34.3	15.7
1947	80.9	40.5	40.4	7.2
1946	87.2	50.4	36.8	7.6

*Data not available.

Source: See Table 7.

Table 21. ACP practices grouped by ability to fulfill objectives, New York (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	76.4	76.8	79.1	72.9	72.6	67.5	50.9	23.8	44.9	67.6	93.0	92.5	93.0	89.3	88.4	80.1	86.4	92.8
1. Lime and other minerals	64.8	65.2	67.3	60.3	61.7	59.2	43.5	18.2	36.4	56.8[c]	82.8	85.4	88.2	83.2	81.1	73.5	80.8	87.2
2. Drainage	10.4	10.4	10.9	11.7	9.8	7.9	7.1	5.4	7.8	10.5	4.7	3.8	2.5	2.5	4.7	5.4	5.3	3.2
3. Irrigation	0.2	0.3	0.2	0.2	0.4	0.4	0.3	0.2	0.1	0.2	...	...	0.1	0.1	0.1	...	0.2	...
4. Practices discontinued	...	...	...	...	...	...	...	...	...	0.1	4.4	2.6	1.6	2.9	1.7	1.2	...	2.4
5. Others	1.0	0.9	0.7	0.7	0.7	(b)	(b)	(b)	0.6	(b)	1.1	0.7	0.6	0.6	0.8	(b)	0.1	(b)
Group II	18.1	18.9	16.8	22.2	22.1	27.0	42.2	68.4	46.1	27.6	2.1	1.7	2.1	4.2	4.6	3.0	3.4	1.7
6. Perm. vegetative cover	7.7	8.8	8.2	12.5	12.4	18.2	32.6	54.9	24.5	12.0	...	...	...	...	...	...	...	...
7. Terraces & erosion control	1.4	1.4	1.4	1.6	1.4	1.3	1.1	0.9	1.1	1.6	1.3	0.5	0.3	0.2	0.4	0.5	0.4	0.4
8. Forestry	4.3	3.8	2.7	2.8	2.9	2.0	1.8	2.5	1.7	1.1	0.8	1.2	1.1	0.8	0.9	0.6	0.6	0.4
9. Improving veg. cover	1.9	1.9	2.0	3.1	2.8	2.4	4.8	8.7	15.9	10.3	...	...	...	2.3	2.4	1.7	1.9	0.7
11. Conserv. livestock water	2.8	3.0	2.5	2.2	2.6	3.1	1.9	1.4	2.9	2.6	...	...	0.7	0.9	0.9	0.2	0.5	0.2
Group III	5.5	4.3	4.1	4.9	5.3	5.5	6.9	7.8	9.0	4.8	4.9	5.8	4.9	6.5	7.0	16.9	10.2	5.5
13. Gr. manure & temp. cover	2.9	2.5	2.6	2.7	2.1	1.9	1.8	2.0	2.8	0.2	3.2	4.4	3.7	5.0	5.0	12.7	5.0	3.3
14. Add. legumes & grasses	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Mulch. & emergency tillage	...	...	...	...	...	...	...	...	...	...	1.3	1.2	1.1	1.0	1.4	1.8	2.2	1.9
16. Stripcrop. & contour. orch.	1.0	1.0	0.9	1.1	1.1	1.5	1.0	2.3	0.8	0.8	0.4	0.2	0.1	0.3	0.2	0.2	0.2	0.3
17. Competitive shrub control	(a)	0.5	0.6	1.1	2.1	2.1	3.2	2.5	5.4	3.8	...	...	...	...	...	...	...	...
18. Others	1.6	0.3	...	...	...	...	...	...	...	...	...	...	...	0.2	0.4	2.2	2.8	...

[a]Less than .05%.

[b]Fencing and hedgerow removal not separated out.

[c]Minerals are allocated 100% to Group I during 1946-53.

Source: See Table 6.

In addition to the mineral practices that caused most of the changes in Group I, the drainage practices were the only other important subgroup. The share of funds going to drainage practices increased from 4.7 to 10.5 percent during 1953-54. Then, their share declined to 5.4 percent by 1956 before climbing to over 10 percent during the sixties. Again, the response of drainage and mineral practices to the policy change is much the same as that found in the other states.

The Group II practices, particularly permanent vegetative cover, moved almost in reverse to the Group I practices. From 1946-53 Group II's share comprised only 2 to 5 percent of the ACP payments, but beginning in 1954 with a jump to 27.6 percent it increased to a high of 68.4 percent by 1956. This was then followed by a decline to only 18 percent by 1963. During the increase and subsequent decline of payments to Group II practices, subgroup 6 ranged from 12 percent in 1954 to 54.9 percent in 1956 and 7.7 percent in 1963. Previous to 1954, subgroup 6 had not been used at all, but much of the minerals during the middle fifties appear to have been applied under it. For example, in 1957 more than 50 percent of the funds spent on permanent vegetative cover went for commercial fertilizer.

Other subgroups in Group II may have been increased or started in 1954 to use up funds that could no longer be used to apply only minerals. Both subgroups 9 and 11,

improvement of vegetative cover and conservation of livestock water, were not used in 1953 and their proportion of ACP funds went to 10.3 and 2.6 percent respectively in 1954. Payments to subgroup 11 were maintained at a level near 2.6 percent through 1963, while subgroup 9's payments declined to 2 percent by 1961. Hence, subgroup 9 appears to have been initiated during 1954-56 so minerals could be applied under it; for example, in 1955 over 90 percent of the funds spent under subgroup 9 went for minerals. The portion of payments used for Group II practices appear to have been increased more to subsidize fertilizer and lime than to promote conservation. On the positive side, the forestry practices not using minerals have increased their share steadily from around 1 percent during 1946-53 to 4.3 percent in 1963.

In contrast, Group III has changed very little as its portion of payments has fluctuated between 4 and 9 percent since 1949. No change was evident in 1954 but this was due to opposing shifts between subgroups. The share of ACP funds to subgroup 13, green manure and other temporary cover practices, declined in 1954 from 3.2 percent to almost nothing, but by 1955 the level had again been restored to 2.8 percent. The introduction of the practice for control of competitive shrubs in 1954 made up for the reductions in subgroup 13 and actually led to increases in Group III's share. Since the high of 5.4 percent in 1955, control of competitive shrubs'

relative share has decreased to less than 0.05 percent by 1963, because the new administration appears to have tried to eliminate this practice. Offsetting the decline in control of competitive shrubs are wildlife practices which account for all of subgroup 18. Wildlife practices seem to be catching on in New York, much like they have in Michigan.

By shifting funds around after the 1954 policy change, ACP in New York was able to reduce the percentage of temporary practices from a share of 8.9 percent, which had prevailed from 1946-53, to only 0.3 percent in 1954. This decrease in the proportion of payments was due to the decline in subgroup 13 and the complete dropping of subgroup 15, mulching and emergency tillage. Although the share was raised to 2.8 percent by 1955, the percentage going to temporary practices seems to have been reduced in line with the objective of promoting practices of enduring benefit. But offsetting this reduction was the increase in the portion going to drainage practices. Thus, the relationship between a decrease of ACP payments to temporary practices and a corresponding increase to drainage or irrigation practices appears to hold in New York.

The program in New York is very similar to that of the other Northeastern states. For example, in all the Northeastern states but New Jersey, over 55 percent of the ACP funds went for mineral applications, and even ACP in

New Jersey spent 34 percent of its funds for minerals. The important differences between states in the Northeast is the distribution of funds between lime and other minerals. In the states of Vermont, New Hampshire, Connecticut and Rhode Island a much larger proportion of payments going to minerals went for commercial fertilizers, particularly super phosphate.

Virginia

ACP in the Middle Atlantic or Appalachian states, of which Virginia is representative, is similar in many respects to ACP in New York. To illustrate, between 50 and 88.3 percent of the ACP payments in Virginia have been used for minerals (see Table 22). The largest share of the payments for minerals have gone for fertilizers, whose share went from 60.8 to 29.8 percent during 1953-54, after which it has been near 50 percent. The big decline in 1953-54 was probably due to the change to a package practice policy, for it took the State Development group a year to adjust their program to maintain a high level of fertilizer assistance. The share of payments used for applying lime dropped from almost 43.8 percent in 1946 to 13 percent in 1957, before climbing up to 22.5 percent by 1962. The portion used for minerals was reduced to 50 percent after the policy change of 1954 but by 1962 it had reached 72.5 percent, the highest level since 1953.

Table 22. The proportion of ACP payments used for minerals and temporary practices, Virginia (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	15.2
1962	72.5	22.5	50.0	8.6
1961	68.2	19.9	48.3	10.5
1960	63.4	18.4	45.0	7.7
1959	64.2	19.3	44.9	6.0
1958	61.7	13.7	48.0	4.9
1957	66.3	13.0	53.3	5.0
1956	66.3	14.1	52.2	5.8
1955	63.9	13.7	50.2	7.5
1954	50.0	20.2	29.8	1.1
1953	84.4	23.6	60.8	14.0
1952	80.2	23.6	56.6	17.7
1951	79.7	28.2	51.5	17.3
1950	78.4	26.1	52.3	18.7
1949	81.0	34.0	47.0	20.4
1948	82.4	40.6	41.8	23.2
1947	84.6	40.7	43.9	21.0
1946	88.3	43.8	44.5	19.9

*Data not available.

Source: See Table 7.

The share of payments used for temporary practices, in line with general ACP policy, decreased from 14 percent to only 1.1 percent in 1953-54. This proportion was, however, increased to 7.5 percent in 1955 and to 15.2 percent by 1963. The temporary practices actually began receiving a declining percentage as early as 1949. The policy change of 1954 may have only accelerated the rate of decline for one year.

Certain longer lasting improvements appear to have been brought about by the policy change of 1954 as Group I practices' share of ACP payments dropped from over 70.3 to 23.6 percent during 1953-54 and continued to decline until 1957, when it was 9.6 percent (see Table 23). After the 1957 low, however, Group I's share has climbed back up to 18.3 percent. In contrast, Group II practices' share jumped from 16.4 to 73.8 percent in 1953-54 and reached their peak share of 81.9 percent in 1957 before declining to 63 percent in 1963. Group III practices, on the other hand, have made changes similar to both the other groups. Their share dropped from 17.8 percent in 1952 to 2.6 percent in 1953-54 before rising to 20 percent by 1956. This was then followed by a decline to 7.5 percent by 1958 before a steady increase raised Group III's share to 18.7 percent in 1963. Although many of the improvements made in the middle fifties still remain, it appears that some of the effects of the policy change have worn off.

Table 23. ACP practices grouped by ability to fulfill objectives, Virginia (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	18.3	17.6	17.5	16.2	16.1	13.4	9.6	11.8	10.9	23.6	70.3	65.3	64.9	64.3	66.6	67.1	69.3	71.4
1. Lime and other minerals	10.1	9.4	7.0	5.9	5.3	3.0	2.8	4.3	3.9	9.5	67.5	64.2	63.7	62.8	64.8	66.0	67.7	70.6
2. Drainage	5.1	5.7	6.7	6.9	7.6	7.2	5.1	4.8	3.2	5.3	1.8	1.0	1.2	1.2	1.6	1.0	1.3	0.1
3. Irrigation	2.2	1.8	3.2	3.0	2.7	2.8	1.3	2.3	3.1	6.6	0.1	...	...	...	...	...	...	...
4. Practices discontinued	0.5	0.4	0.3	0.1	0.1	0.1	(a)	...	...	...	0.9	0.1	(a)	0.3	0.2	0.1	0.3	0.7
5. Others	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.7	2.2	...	...	...	...	...	...	...	...
Group II	63.0	69.3	69.4	73.6	75.4	79.1	81.9	68.2	71.2	73.8	16.4	16.9	17.5	17.0	12.9	9.6	9.3	9.1
6. Perm. vegetative cover	15.1	17.5	20.2	27.0	30.6	39.0	38.8	20.9	10.3	22.0	...	...	...	...	...	...	...	...
7. Terraces & erosion control	1.1	1.0	0.9	0.9	1.0	0.7	0.4	0.6	0.6	0.6	0.1	(a)	0.1	0.1	0.1	0.1	0.2	0.3
8. Forestry	3.6	4.6	4.9	5.4	4.4	4.3	4.2	4.3	2.6	0.5	0.2	0.1	(a)	(a)	(a)	(a)	(a)	(a)
9. Improving veg. cover	41.2	44.1	41.2	37.4	36.4	32.2	36.2	37.2	49.0	31.7	7.0	8.1	8.8	8.8	4.4	1.1	0.6	...
10. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	8.4[b]	8.0	8.0	7.8	8.1	8.2	8.5	8.8
11. Conserv. livestock water	2.0	2.1	2.2	2.9	3.0	2.9	2.3	5.2	8.7	19.0	0.7	0.7	0.6	0.3	0.3	0.2	...	...
Group III	18.7	13.1	13.1	10.2	8.5	7.5	8.5	20.0	17.9	2.6	13.3	17.8	17.6	18.7	20.5	23.3	21.4	19.5
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	8.4	8.0	8.0	7.8	8.1	8.2	8.5	8.9
13. Gr. manure & temp. cover	14.6	8.1	10.2	7.6	5.9	4.9	4.9	5.8	7.5	1.1	4.6	9.6	9.3	10.6	12.1	14.8	12.2	10.4
14. Add. legumes & grasses	1.9	3.2	1.8	1.3	1.5	1.8	2.9	12.9	9.7	0.4	...	...	...	...	...	...	...	...
15. Mulch. & emergency tillage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Stripcrop. & contour. orch.	0.4	0.5	0.7	0.7	0.5	0.5	0.6	1.0	0.3	0.6	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2
17. Competitive shrub control	1.3	1.3	0.4	0.6	0.6	0.3	0.1	0.3	0.4	0.5	...	...	...	...	...	...	...	...
18. Others	0.5	...	...	...	...	...	...	...	...	...	...	...	...	...	....	...	0.5	...

[a]Less than .05%.

[b]Minerals are allocated 80% to Group I and 10% to Group II and III from 1946-53.

Source: See Table 6.

To further bring out the changes of ACP in Virginia, the analysis now turns to the subgroups within Group I. As has been observed in other states, the share of payments used for drainage and irrigation practices increased substantially during 1953-54, from 1.9 to 11.9 percent. The irrigation practices had received no payment prior to 1953 but comprised 6.6 percent of the payments in 1954 before declining and leveling off at about 2 percent. The drainage practices went from a share of 1.8 percent to over 5.3 percent in 1953-54 and maintained this share, although it did decline to 3.2 percent in 1955 before hitting a high of 7.6 percent in 1959. The greatest share of payments, however, went for mineral practices as their decline in 1953-54 and subsequent rise in the late fifties and early sixties brought about the big changes in Group I's share.

Only two subgroups accounted for most of the increase in the portion of ACP payments to Group II: permanent vegetative cover practices and practices to improve vegetative cover. Their total share combined with subgroup 10 comprised less than 17 percent before 1953 but from 1954 on it was greater than 50 percent. The peak share of 75 percent was reached in 1957 before a downward trend brought the share to 56.3 percent by 1963. Subgroup 9 has contributed most to this total since its share has been between 31.7 and 44.1 percent during 1954-63, while subgroup 6's share reached its

peak of 39 percent in 1958 and steadily declined to only 15.1 percent by 1963. The relative share going to each of these subgroups is important in that all of subgroup 9's payments go for minerals while about 80 percent of subgroup 6's are made for minerals.

The forestry practices, subgroup 8, also got a boost in 1954 as their share of ACP payments went from 0.2 percent in 1953 to 4.3 percent in 1956, which has been maintained through 1963. The percentage of funds going to subgroup 7, terraces and erosion control devices, increased from 0.1 to 1.1 percent during 1953-63 with the largest single increase coming in 1953-54. Practices conserving livestock water, subgroup 11, show a definite increase in their portion of from 0.7 to 19 percent during 1953-54, but this increase is the consequence of ACP administrators trying to use up ACP funds. For subgroup 11's share quickly dropped to a little over 2 percent in 1957 and was maintained through 1963. As a result of these many, many shifts among subgroups, Group II first increased its share slowly from 1946-51 before making big increases in the middle fifties and then declining from 1958-63.

In Group III it appears that during 1955-56 subgroup 14, additional legumes and grasses, was used as an outlet for ACP funds. Roughly 10 and 13 percent of the ACP payments were used for these practices in 1955-56, but their

share dropped to less than 2 percent by 1958. The only other subgroups of any consequence in this group are the green manure and other temporary cover practices, subgroup 13, and the minerals used in establishing them. When subgroup 13 is added to its estimated mineral component, subgroup 12, they account for almost all of Group III from 1946-53. Then, in 1953-54 subgroups 12 and 13 had a declining share of from over 13 to 1.1 percent before rising to 7.5 percent in 1955 and 14.6 percent by 1963. After 1956, the green manure and other temporary cover practices again became the predominate practices in Group III.

ACP in Virginia seems to be representative of other states in the Middle Atlantic or Appalachian region. For example, the program in Tennessee used from 43 to 67 percent of its payments for minerals during 1949-58 and 69 percent in 1962. The other mineral components (fertilizers) comprised the lion's share of from 31 to 50 percent, while lime accounted for 8 to 25 percent during 1949-58 and 34 percent in 1962. The use of these minerals seems to be confined mainly to vegetative practices, but at least two questions should still be raised. First, what proportion of the funds go to apply minerals under temporary cover practices that can lead to immediate increases in production? ACP in Virginia scores well on this point as in 1963 only 15 percent of the total payments went for temporary cover practices

while over 50 percent went for permanent cover practices. Since 1958, however, the share used for establishing permanent vegetative cover has decreased noticeably. Second, how permanent are the permanent vegetative cover practices? If the permanent vegetative cover is maintained for only one or two years, then the heavy uses of fertilizers with these practices will lead to increased present crop production. No research is available which might indicate how the program in Virginia or any other state scores on this latter question.

In general, however, ACP in Virginia seems to be closer to fulfilling program objectives than most of the other states analyzed. More than 60 percent of the funds are used for practices that seem to best fulfill program objectives, while less than 20 percent goes to those least meeting objectives. Still, over 72 percent of the payments go for minerals, which does not make the fertilizer and lime industries unhappy. The apparent good record of ACP in the Appalachian states as well as the strong limestone lobby, may explain part of the reason why their Congressmen are such hardy supporters of ACP.

Georgia

ACP in Georgia, like in the other Eastern states, uses a large share of payments for assistance in applying fertilizers and lime (see Table 24). Beginning in 1946, at least 28.1 percent of the ACP payments were spent on minerals and since 1955 the share has been between 56.4 and 60.3 percent. The larger share of from 22.4 to 48.1 percent has gone to other minerals, such as phosphorous, while only 5.7 to 22.2 percent has gone for agricultural liming materials. But since 1955, the share used for liming materials steadily increased until it was 22.2 percent in 1962. On the other hand, the fertilizer component constantly decreased from its high of 48.1 percent in 1955 to 36.6 percent in 1962. Contrary to other states analyzed, the change to a package practice approach did not reduce the share going to minerals, for the share actually increased during 1953-54. The proportion of ACP funds going for fertilizers was also higher after 1954 when it ranged from 36.6 to 48.1 percent as compared to 22.4 to 32.3 percent during 1946-52.

The relative proportion of payments used for the three groups of practices show only minor fluctuations during 1946-63, for from 5.4 to 18.9 percent of the ACP funds went to Group I practices, 28.8 to 46.9 percent to Group II and finally 39.1 to 64.3 percent to Group III (see Table 25).

Table 24. The proportion of ACP payments used for minerals and temporary practices, Georgia (1946-63)

Year	Total Minerals (%)	Lime (%)	All Other Minerals (%)	Temporary Practices (%)
1963	(n)*	(n)	(n)	39.2
1962	58.8	22.2	36.6	36.2
1961	57.4	19.2	38.2	37.8
1960	58.5	17.9	40.6	41.4
1959	58.4	16.6	41.8	43.0
1958	60.3	16.8	43.5	41.4
1957	58.5	14.8	43.7	42.9
1956	56.4	11.3	45.1	44.1
1955	58.5	10.4	48.1	61.0
1954	52.5	15.9	36.6	47.3
1953	51.0	10.6	40.4	40.5
1952	45.1	12.8	32.3	61.7
1951	31.5	9.0	22.5	54.7
1950	28.1	5.7	22.4	59.1
1949	31.9	7.0	24.9	56.7
1948	36.5	8.7	27.8	53.1
1947	31.2	8.5	22.7	61.2
1946	37.5	10.2	27.3	57.0

*Data not available.

Source: See Table 7.

Table 25. ACP practices grouped by ability to fulfill objectives, Georgia (1946-63)

	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
	Percent																	
Group I	15.1	15.2	14.7	12.5	13.3	12.3	13.0	14.0	5.4	5.5	14.0	11.7	8.6	9.7	12.5	15.6	17.3	18.9
1. Lime and other minerals	6.6	8.2	8.4	7.7	7.1	7.1	6.6	4.8	1.9	2.5	12.8	11.3	7.9	7.0	8.0	9.1	7.8	9.4
2. Drainage	1.7	1.8	1.4	1.3	0.9	0.8	0.5	0.6	0.4	0.5	0.1	0.1	0.2	0.3	0.5	0.9	1.1	0.6
3. Irrigation	2.0	1.4	1.0	0.4	0.2	0.2	0.3	0.8	1.0	0.6	(a)	...	(a)	(a)	(a)	(a)	(a)	(a)
4. Practices discontinued	...	...	...	...	...	...	...	...	...	...	1.0	0.3	0.5	2.4	4.0	5.6	7.3	8.9
5. Others	4.8	3.8	3.9	3.1	5.1	4.2	5.6	7.8	2.1	1.9	0.1	(b)	(b)	(b)	(b)	(b)	1.1	...
Group II	42.9	46.1	45.4	43.8	41.6	42.9	40.4	36.8	30.3	39.8	46.9	26.9	37.2	33.6	34.8	36.8	28.8	33.1
6. Perm. vegetative cover	28.2	30.1	29.9	26.8	23.2	24.6	23.1	16.3	10.7	16.5	1.2	0.7	1.3	3.0	1.5	1.6	1.8	3.2
7. Terraces & erosion control	1.7	2.1	1.5	1.3	0.8	0.9	0.8	1.1	0.6	0.8	0.2	0.1	0.3	0.6	1.9	1.8	3.1	4.6
8. Forestry	3.6	4.8	5.1	5.0	5.5	3.9	2.7	1.1	0.8	1.1	1.1	0.2	0.5	0.6	0.6	1.5	1.3	1.9
9. Improving veg. cover	5.5	5.7	4.8	6.5	7.8	7.4	8.0	13.8	12.4	14.3	30.5	14.3	26.6	21.7	22.0	21.0	13.1	11.2
10. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	12.8[c]	11.3	7.9	7.0	8.0	9.1	7.8	9.4
11. Conserv. livestock water	3.9	3.4	4.1	4.2	4.3	6.1	5.8	4.5	5.8	7.1	1.1	0.3	0.6	0.7	0.8	1.8	1.7	2.8
Group III	42.0	38.7	39.9	43.7	45.1	44.8	46.6	49.2	64.3	54.7	39.1	61.4	54.2	56.7	52.7	47.6	53.9	48.0
12. Lime and other minerals	...	...	...	...	...	...	...	...	...	...	25.5	22.5	15.8	14.0	16.0	18.3	15.6	18.7
13. Gr. manure & temp. cover	39.2	36.2	37.7	41.4	43.0	41.4	42.9	44.0	60.9	47.3	13.6	38.9	38.4	42.7	36.7	29.3	38.3	29.3
14. Add. legumes & grasses	2.2	2.4	2.2	2.3	2.1	3.4	3.7	5.2	3.4	7.4	...	...	...	...	...	...	...	...
15. Mulch. & emergency tillage	...	...	...	...	...	...	(a)	(a)	(a)	(a)	...	...	...	...	...	...	...	(a)
16. Stripcrop. & contour. orch.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17. Competitive shrub control	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. Others	0.6	0.1	...	...	...	...	...	...	...	...	...	(a)	(a)	(a)	(a)	(a)	(a)	...

[a]Less than .05%.

[b]Fencing not separated out in statistics.

[c]Minerals are allocated 25% to Group I and II and 50% to Group III during 1946-53.

Source: See Table 6.

The change to a package practice policy had little or no lasting effect on the distribution of payments. Group I practices decreased slightly in 1954 but went back up in 1956 while Group II practices dropped slightly and Group III practices increased.

Temporary practices' share also failed to decrease and actually increased during 1954 and 1955 before starting to decline in 1956. This decline continued until 1962 as their share of payments dropped from 61.0 to 36.2 percent. Practices for establishing green manure and other temporary cover made up the largest part of the temporary practices. Therefore, the increases and decreases in green manure and other temporary cover practices' share was much the same as the total temporary practices. And if green manure and other temporary cover practices are combined with their mineral components, they comprise a share of from a low of 36.2 percent in 1962 to a high of 61.4 percent in 1952.

Green manure and temporary cover practices also accounted for the major share of Group III practices. The only other subgroup of importance was subgroup 14, additional legumes and grasses, and it was not used until 1954. The practice was probably adopted to help maintain payments for minerals after the policy change, and following a high of 7.4 percent in 1954 its share declined to only 2.2 percent when better ways were found to make payments for minerals.

Alterations in subgroups within Group II indicate that the change to the package practice approach in 1954 did have some effect on ACP in Georgia. The combined totals of the two permanent vegetative cover practices, subgroups 6 and 9, have fluctuated from a high of 44.5 percent in 1953 to 23.1 percent in 1955. An encouraging sign has been the increasing share going for establishment of permanent vegetative cover, as compared to a decline in the share used for improving vegetative cover. Since 1955, ACP funds allocated to subgroup 6 have gone from 10.7 to 30.1 percent in 1962, while those to subgroup 9 have dropped from 12.4 to 5.7 percent. This relative shift is important, since over 90 percent of the subgroup 9 payments go for minerals while only about 70 percent of subgroup 7 payments are used for minerals.

The forestry practices gradually increased their portion of payments in 1953 and reached a share of 3.6 to 5.5 percent by the late fifties and early sixties. The percentages going to subgroups 7 and 11 also increased during 1953-54; subgroup 11 went from 1.1 to 7.1 percent before declining to 3.9 percent in 1963. However, these subgroups have fluctuated such that Group II's share has only gradually increased since 1946.

The proportion of payments used for Group I practices has gone up due to a steady increase in the irrigation and drainage practices' share along with subgroup 5's. These

latter increases were enough to counterbalance the effect of decreases in minerals and subgroup 4. Although drainage and irrigation practices comprise 3.7 percent of the state's payments in 1963, this was a substantial increase from the 0.1 percent of 1953.

In comparison with ACP in Georgia, 11 percent of the ACP payments in South Carolina were used for forestry practices in 1963. In Mississippi, from 84 to 56 percent of the ACP payments went for minerals during 1949-58, most of which were applied through vegetative practices. Over 90 percent of the ACP payments in Mississippi went for vegetative practices, while over 80 percent of funds in Georgia are spent in this manner.

During 1962, all the ACP programs in the Southeastern states except South Carolina used between 50 and 62 percent of their payments for minerals, with a slightly larger proportion going for fertilizers than for lime applications. Most of these minerals were applied as part of a vegetative cover practice. Thus, ACP in Georgia is fairly representative of most other states in this region, although the distribution of payments between vegetative cover practices does vary among states.

Summary

The analysis of ACP in nine states brings out vividly the regional differences. With the large diversification in climate and soil, such a variation in conservation programs should be expected. But the large variations in the proportions of ACP payments going to the three groups of practices cannot be justified solely on the basis of differences in conservation and land-use adjustment problems. ACP's objectives indicate it should promote those practices needed to solve conservation and land-use adjustment problems and that the farmers would not carry out on their own.

The change to a package practice approach moved ACP closer to fulfilling its objectives in some respects, though not in others. In almost every state analyzed, the policy change brought about an increase in the share of payments going to irrigation or drainage practices or both. On the positive side, the change brought a decline in the share of payments going to temporary practices and an increase in the share used for permanent vegetative cover and forestry practices. Finally, the proportion of payments going for fertilizers declined while that going for liming materials increased.

The reason for this type of response to the policy changes stems from a number of conflicts that arise when state development groups try to fulfill program objectives.

A move to reduce temporary practices means other practices must be increased if the state is to use up its money. The easiest practices to get farmers to use seem to be drainage, irrigation or liming practices. Thus, a large increase in production increasing practices tends to follow the decreases in temporary practices. Then, when a development group finds that too much money is being spent on Group I practices, it tries to increase payments to other practices. Ironically, the easiest to increase are the temporary practices, so there is a decrease in Group I practices at the expense of increasing temporary practices.

One of the keys to the problem is that a state wants to use up all its funds, for if it does not, future appropriations are reduced. Strong incentives push states to above all else spend their full appropriation or more, since this means more funds for the future. The formula for distributing funds among states and then among counties is based 70 percent on whether past appropriations have been used, regardless of how they were used, and only 30 percent on actual conservation needs. Therefore, strong incentives exist at both the state and county levels to use all the appropriations first, and then worry about what the program is achieving second. This tends to undermine any efforts to better fulfill program objectives.

A change in the appropriation formula is needed that will give greater stress to conservation needs and replace past use of funds with something that measures how the funds were used. In other words, do not worry about whether a state or county uses all its funds but rather how the funds are used. An ACP state program using 50 percent of its funds for Group II practices and only 10 percent on Group I practices should be in line for increases in appropriations, while one using 70 percent for Group I practices and only 10 percent in Group II practices should have appropriations decreased. This would put the emphasis not on just spending funds but on spending funds in such a way as to fulfill program objectives.

Another alternative that could be used to both fulfill program objectives and use appropriated funds, would be to increase cost-share rates on Group II practices and decrease them on Group I practices. This could be done in each state without any prior approval from Congress and would only require approval by the federal administration. The increase in cost-share rates would increase both the quantity of practices and the money used.

The analysis also shows how ACP payments in the Western states have gone largely to irrigation practices, while ACP claims fulfillment of program objectives on the basis of a low proportion of funds going to temporary

practices. The programs in the Midwestern and Lake states used a large proportion of their funds for drainage practices and mineral applications, while in the Plains states a high proportion went to temporary practices. Finally, in the Eastern states a large proportion of payments went for minerals; in all but two of these states over 50 percent of the ACP payments were used for mineral applications.

One possible way these regional excesses could be corrected would be to place restrictions on the amount of funds used for specific practices. For example, in the West funds going to irrigation practices could be restricted to 25 percent or less of the payments, while in the Midwestern and Eastern states a comparable restriction could be placed on drainage practices as well as certain fertilizer and lime applications. Such regional restrictions in combination with a formula for allocating funds on the basis of the proportion of payments used for Group II practices should move the whole ACP program closer to fulfilling program objectives.

CHAPTER VII

MINIMIZING ACP COSTS

With the evaluation of ACP's distribution of funds completed, the next task is to determine if the same ACP practice adoption could have been achieved at a lower cost. First, the economic framework for analysis will be presented, showing the general impact of ACP at the farm and state levels. Second, the agricultural liming practices are analyzed to indicate if ACP has actually increased practice use over what farmers would have done on their own. Any funds spent on practices farmers would carry out on their own does not add to total practice use and to the extent these expenditures are eliminated, ACP costs are reduced without reducing practice use.

Third, has the cost-share necessary to induce farmers to use a practice been kept at a minimum? For if the cost-share can be reduced on certain practices without curtailing their use, then the same results could be accomplished but at a lower cost. The amount ACP has paid a farmer over that necessary to induce him to use a practice can be considered an income transfer, or possibly part of the cost of getting

the last farmers to use the practice. Finally, to the extent ACP funds are used to fulfill objectives other than ACP objectives, expenditures are increased without adding to the total quantity of practices applied. A prime example of this is the promotion of the small family farm by the small cost-share increase.

Economic Framework

In developing the economic framework, the following will be assumed: (1) the state of the arts constant to fix the production functions, (2) fixed utility functions, (3) constant institutional structure, (4) perfect knowledge and foresight as well as rationality of persons or groups and (5) consumers are motivated to maximize satisfactions while producers are motivated to maximize money profits. These assumptions do not limit the analysis to either perfect competition or continuous functions and they will be relaxed in the analysis sections.

At the level of the individual farm firm, the farmer has available to him a number of inputs, some fixed and others variable, with which to produce the combination of products maximizing his money profits. He is continually confronted with the problem of whether or not to use a practice, such as tile drainage or terracing. If he decides to use the practice, he must also decide how much to apply and

how best to combine his inputs in applying the practice. Static economic theory indicates he will combine the inputs in their less cost combination and apply the practice until its cost equals its marginal value product.

When ACP is introduced, it reduces the cost of a practice to the farmer and should increase its use, depending on the farmer's marginal value product curve. Assuming product prices, input prices and inputs not used in the practice are constant, the farmer should increase practice use moving along his line of least cost combination until the marginal value product again equals practice costs. But in the cases where ACP only cost-shares for part of the inputs used in the practice, the farmer will face a different line of least cost combination and marginal value product curve. This would be the case if ACP cost-shares only on out of pocket costs, encouraging the farmer to use proportionately less of inputs, such as his own labor, and more of the inputs cost-shared on by ACP.

The amount ACP is able to increase practice use will depend on the shape of the farmer's marginal value product curve. If his marginal value product curve is steep and inelastic, large changes in cost-shares will only bring about small changes in the quantity of practice applied, while the opposite would be true for relatively flat and elastic marginal value product curves. The shape of the

farmer's marginal value product curve would be implicit in the relationship between ACP cost-shares and the quantity applied under ACP. As ACP cost-shares increase, the quantity applied under ACP should increase, but at a rate dictated by the shape of the farmers marginal value product curve.

Shifting the analysis to the state level, if product prices and inputs not used in the practice are assumed constant, then the farmers' marginal value product curves can be summed horizontally to obtain the aggregate practice demand curve or marginal value product curve for the state. Here the equilibrium conditions involve equating the practice's marginal factor cost with its marginal value product, since at this level changes by farmers affect input prices. Changes in production due to ACP may also alter product prices so that the horizontal summations would not be valid, particularly for large changes in widely used practices.

Besides influencing practice use, ACP will probably increase the prices of inputs used in the practices and their complements, while reducing the prices of substitute inputs. The opposite would be true for agricultural product prices, because increased production due to ACP practices cause their supply curve to shift to the right and if demand is fairly constant and inelastic both price and total revenue will decline. Changes in these input and product prices modify ACP's influence on practice use. The increase in

practice use necessary to equate marginal factor cost and marginal value product after the ACP cost-share has been increased will not be as large as when input and product prices are constant.

The problem of isolating the effect of ACP becomes more difficult as variables originally assumed constant are allowed to vary. For certain kinds of practices, particularly such permanent practices as drainage, the quality of land needing treatment will decline overtime. In other words, the land affording the highest returns will be the first treated and the land remaining to be treated will afford lower returns. The aggregate production function and, consequently, the marginal value product curve of the practice shifts downward as the remaining quantity of land needing treatment is reduced; the cost-share necessary to obtain a given additional quantity of practices under ACP goes up.

Other changes involving the program rules would mean new production functions. These changes might be in program requirements or in the inputs paid for under a particular practice. This would also include any major changes in policy that affect either practice use or cost. Such changes may cause abrupt alterations in cost-shares and practice use or even cause the quantity of a practice use to decline while the cost-share increases.

A series of years with dry or wet weather will have an impact on the farmer's production function. After several years of wet weather, the marginal value product curve for drainage will tend to increase. Hence, more farmers will make use of ACP drainage assistance at no increase in cost-shares.

If a number of years can be isolated where the cost-share has changed and the variation in institutional structure, land quality, weather or prices has not been great enough to hide the response, the relationship between cost-shares and quantity of a practice applied under ACP should be fairly predictable. But the response of different practices would not necessarily be the same. The quantity of a given practice should increase if the cost-share increases and decline in response to decreases.

Increasing Practice Use Without Subsidizing Normal Farm Practices

Within the above economic framework, the question is asked whether or not ACP has increased practice use over what farmers would have done on their own. Does ACP continue to cost-share on practices after farmers have found their marginal value product exceeds the cost? And would farmers apply the practice with either no assistance or a reduced assistance? The application of agricultural lime will provide an example of ACP's influence on total practice use, since data is available to compare total practice use against

use under ACP. Practice application in the South Central and Thumb areas of Michigan illustrates how frequently farmers receive payments for profitable practices.

Figure 1 compares total agricultural lime sold in the United States with that sold under ACP. Here the close relationship between total sales and ACP sales is quite apparent; during 1936-49 they moved in the same direction until 1950 when total sales increased by almost 2 million and ACP sales declined by over 1 million tons. From 1950 to 1962 they moved in opposite directions four separate times and the amount sold outside ACP increased by over 3 million tons (see Table 26). The trend towards increased sales without assistance actually began with the cut in appropriations of 1948, when lime sold outside ACP increased by over 2 million tons. During 1947-50 the amount of lime sold outside ACP increased from 1 million to 6.5 million tons, as the importance of ACP in total lime sales seemed to decrease.

Even though the importance of ACP in obtaining increased use of lime weakened, the cut in ACP assistance in 1953 and 1954 still brought about large reductions in total sales of agricultural liming materials. And had the rate of increase in use of lime that prevailed in the twenties prevailed from 1936-63, total sales would have been less than half of what they were in 1963. Although other factors, such as education and prices received, probably contributed to the

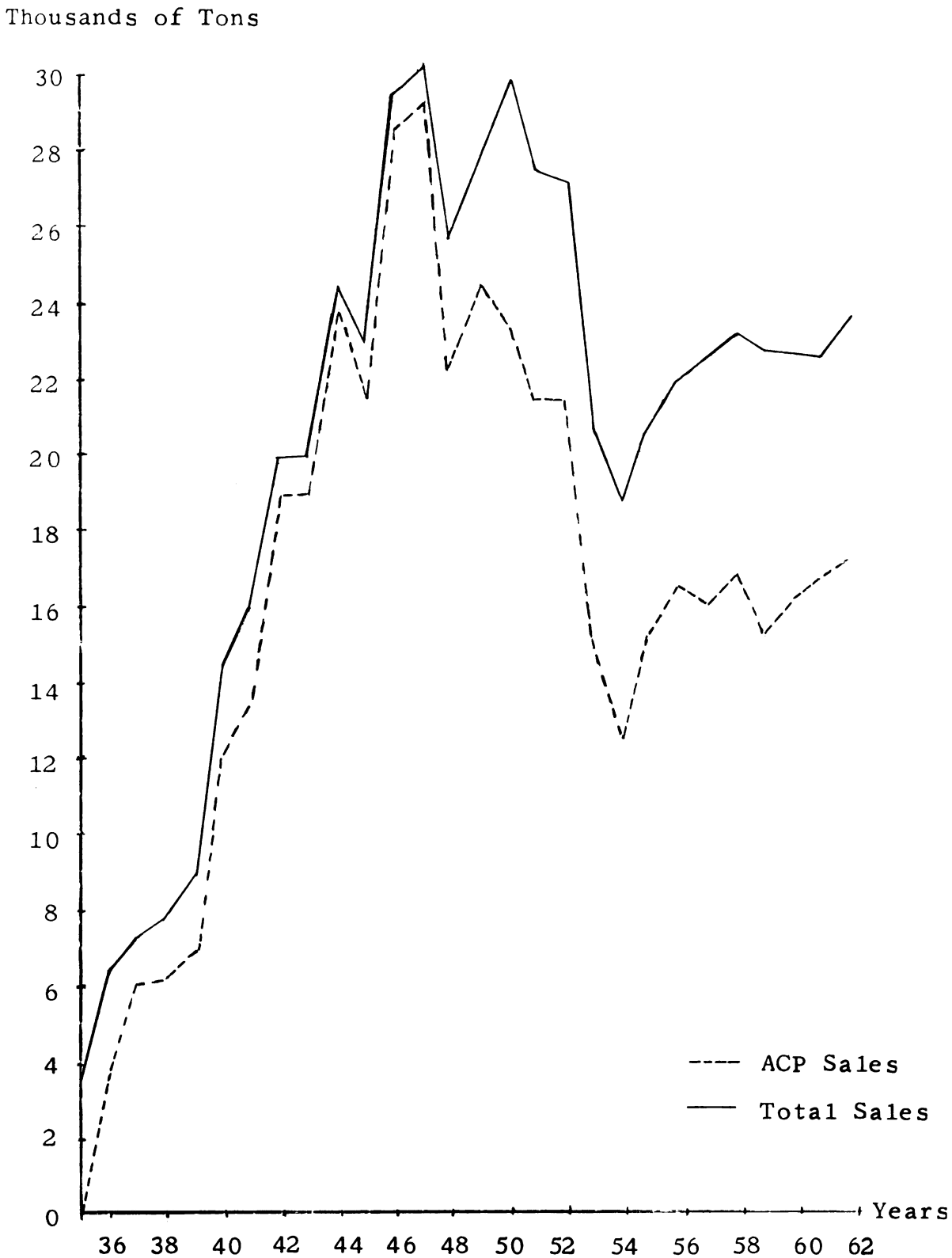

Fig. 1. Total agricultural lime sales and sales under ACP, 1935-62.

Table 26. Total United States agricultural lime sales not subsidized by ACP (1935-62)

Years	1,000 Tons
1962	6,456
1961	5,867
1960	6,365
1959	7,553
1958	6,370
1957	6,556
1956	5,497
1955	5,534
1954	6,486
1953	5,532
1952	5,822
1951	6,147
1950	6,556
1949	3,479
1948	3,411
1947	1,003
1946	886
1945	1,729
1944	827
1943	996
1942	1,964
1941	2,472
1940	2,401
1939	2,255
1938	2,707
1937	2,148
1936	2,863
1935	3,505

Source: A. L. Mehring, J. R. Adams and K. D. Jacob, Statistics on Fertilizers and Liming in the United States, Statistical Bulletin No. 191 (Washington: Government Printing Office, 1957), 162pp; Changes in Farm Production and Efficiency: A Summary Report 1963, USDA St. Bulletin, No. 233, (Washington: Government Printing Office, 1963), pp. 22-23.

increased rate of lime application during the thirties and forties, ACP has been a significant factor in these increases.

How much total lime sales might decrease if ACP assistance were dropped is not clear. The increase in lime sales without ACP assistance during the late forties indicates that at least a proportion of the lime applied under ACP would have been used without assistance. If ACP was only paying for lime farmers would not apply on their own, then decreases in sales under ACP should bring about comparable decreases in total sales while increases in ACP sales should mean equal or greater increases in total sales. This assumes other variables, such as prices received, are fairly constant. But if ACP is not fulfilling its objectives or other variables have substantially affected lime sales, then the above relationships may not hold.

During the first twenty-seven years of ACP's operation, lime sales under ACP have increased eighteen times, but only six times did the total sales increase as much as ACP sales. All but one of the ten largest increases in ACP assistance for liming led to a smaller increase in total sales, while the nine times lime sales under ACP decreased total sales only decreased as much or more three times. Although this is not positive evidence, it does support the proposition that ACP is subsidizing some lime applications

farmers would do without assistance. Hence, even though ACP has increased the use of agricultural lime, further restrictions of its use seem necessary if ACP is not to subsidize normal farming practices.

The discussion now turns to the important question of how to identify normal farming practices. Here is an important task with which those administering ACP should be concerned. One way to identify these practices would be to determine their returns and frequency of use. ACP payments for practices on which farmers receive a high return would only be justified as a means to acquaint the farmer with the practice's value. To the extent continuous payments to the same farmer on high returns practices could be eliminated, ACP costs could be reduced without reducing practice use.

To provide an example of this procedure and to illustrate possible normal farming practices in Michigan, a 1 percent area random sample of farmers was taken in the South Central and Thumb areas of Michigan.[1] Of the 265 farmers sampled, 100 or about 36 percent were found to have used ACP sometime during 1960-64. A five year history of ACP use was obtained for 204 farmers, while a four year history was

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[1]Barry, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Livingston, Shiawassee, Washtenaw, Huron, Lapeer, Sanilac, St. Clair and Tuscola counties.

obtained for 249 and finally a three year history for all 265. It should be noted, some of the farmers may have dropped out of farming after 1962 or not farmed before 1962. But in 1962, all 265 farmers owned or operated farmland that was either being farmed or was in the conservation reserve. Had the sample been restricted to those farming or owning farmland every year during 1960-64, the proportion of those using ACP would have been higher.

Of these 100 farmers who have used ACP, what is the frequency of their use of specific practices? Twenty-six of the 100 farmers have received payments for the same type of practice at least three out of the last four years and some have received payments every year since 1959 for the same practice. Six of these farmers have continuously received payments on more than one practice; in fact, one farmer received payments for both tile drainage and green manure every year during 1960-64.

Three practices seem to be used continuously; green manure, tile drainage and the application of lime under the A-4 practice. Sixteen farmers used green manure three out of the last four years and six farmers used the A-4 practice three out of the last four years, while three farmers used tile drainage four out of the last five years. But what are the returns to these three practices? If they are high enough, they could be classified as normal farming practices

or those many farmers would use without assistance. Drainage investments have estimated returns in the Thumb and Saginaw valley areas of Michigan of 30 percent, which is definitely high enough to indicate that some of the farmers were obtaining unnecessary payments.[2] The same may be true of lime as the returns are from 5 to 10 percent.[3]

One reason tile drainage was not used as continuously as the other two practices is probably due to restrictions certain counties have placed on its use. To illustrate, in certain counties farmers can obtain payments for tile drainage only once every three to six years. Similar restrictions were not found on the liming and green manure practices. But, like the restriction on payments for the tile drainage practice, two conditions may be necessary before restrictions are used: (1) limited funds and (2) too high a percentage of the state or county appropriations going to a particular practice. Appropriations are limited in a few counties that use a high proportion of their funds for agricultural lime. Hence, liming may be restricted in use for a few counties.

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[2]M. David Brooke, "Marginal Productivities of Inputs on Cash Farms in the Thumb and Saginaw Valley Areas of Michigan, 1957," (unpublished Master's dissertation, Michigan State University, 1958), 90 pp.

[3]E. C. Doll, Lime for Michigan Soils, Extension Bulletin 471 (East Lansing, Michigan, 1964), 6 pp.

One of two procedures could be used to help eliminate payments for normal farming practices. First, payments could be limited on relatively profitable practices to only once per farmer. And second, cost-share percentages could be reduced when the farmer receives payments more than once for the same practice.

ACP in Kansas has a restriction on stubble mulching, very similar to the first suggestion, where payments are allowed only once for the same acreage.[4] This, however, would not be an adequate restriction for certain permanent practices which once applied to an acre of land will not be needed again for twenty or more years. The restriction in some Michigan counties limiting payments on tile drainage to once every three to six years is approaching the suggested restrictions. But as already has been mentioned, these restrictions are being used for quite a different reason. They are used so the counties do not run out of ACP funds and are able to spread payments among as many farmers as possible.

Sanilac County, Michigan has a program provision on tile drainage similar to the second suggested procedure for reducing costs. Here the cost-share for tile drainage is 50

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[4]U.S. Agricultural Stabilization and Conservation Service, The 1962 Agricultural Conservation Program, Kansas (Washington: Government Printing Office, 1961), 35 pp.

percent for the first 10 acres drained and 30 percent for any additional acres drained on the same farm at any time. A further improvement might be to only offer a 50 percent cost-share for the first 10 acres, 30 percent for the next 20 acres and 10 percent for the last 20 acres. After the farmer had drained 50 acres with ACP assistance, no further payments should be made for tile drainage on his farm.

Such program provisions would allow ACP to acquaint the farmer with the benefits from these practices but would help prevent them from receiving continuous payments for something they would do on their own. Continued ACP payments would only be justified on practices where benefits to the nation are equal to or greater than the cost-share and where returns are not sufficient to justify the farmer's use. If payments could be limited to only these cases, ACP would achieve its present total practice use, but at a reduced cost.

Minimizing the Cost-Share

Increased cost-shares should increase practice use under ACP while decreased shares should have the opposite effect, except where total funds are limiting and payments are restricted or where the practice demand curve is perfectly inelastic. But what size of response can be expected and are there some practices where reductions in cost-shares would not reduce total use? Also, if the objective is to

increase practice use, what practices require the largest increase in cost-shares to achieve it? To help answer these questions, the response of practice use to changes in cost-shares will be measured on six Michigan ACP practices.

To isolate the actual changes in cost-shares and their impact on practice use, the costs have been deflated by the index of prices paid by farmers for all inputs used in production, including interest and wages. This will help remove the effect of changes in input prices. Practices will be grouped according to the degree their production functions over time might be influenced by changes in average land quality of acres remaining eligible for payments. Certain kinds of permanent practices are likely to be significantly affected, while temporary practices are not. The response measured at widely different points in time may involve different production functions. And to the extent land quality has changed over time, the greater will be the possible differences in production functions. Therefore, differences between two consecutive years will be analyzed to reduce the possible effects of a shift in the production function.

Where the cost-share has changed significantly, the practice response to these changes will be measured by the percentage change in quantity over the percentage change in cost. This will be referred to as the practice's "response elasticity." The greater the positive response elasticity,

the more a practice has been influenced by a given change in cost-shares. If the response elasticity is negative the practice is either being affected by variables assumed relatively constant or the cost-share is too high.

Of the practices selected for analysis, the drainage and forestry practices are most likely to have their production functions influenced by changes in the land remaining to be treated. Both sets of practices should endure for twenty to fifty years. Over time the acres remaining would be more expensive to treat and afford the farmer lower returns. This means that the aggregate practice demand has been shifting downward. For example, the underground drainage practice has gone from one mainly of random tile to one involving grid tile spaced 4 to 6 rods apart and more recently to grid tile spaced only 2 rods apart. Such changes, due mainly to shifts in the quality of land available needing treatment and different SCS regulations, are major reasons for the fivefold rise in the United States average cost-shares during 1947-61 (see Table 27).

While the cost-share for underground drainage in the total United States has gone up steadily, declining only four of the last sixteen years, the acres drained per year have gradually declined. Open drainage has shown a very similar trend in cost-share, although not of the same magnitude. And like underground drainage, the trend is probably due largely to changing land quality and SCS regulations.

Table 27. ACP cost-share and quantity used of selected practices in the total United States and Michigan, 1946-63[1]

	Underground Drainage Systems				Open Drainage Systems				Tree and Shrub Planting				Improving Tree Stands	
	United States		Michigan		United States		Michigan		United States		Michigan		Michigan	
Year	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres
1963	30.76	331	32.60	41	4.98	877	6.80	13	15.63	224	17.99	7	11.80	8
1962	30.87	367	32.80	46	4.99	1,027	9.13	10	14.65	287	19.42	7	12.18	10
1961	30.01	385	37.20	51	5.13	1,058	8.35	16	12.81	339	18.84	9	11.76	13
1960	27.84	401	37.67	50	4.82	1,173	9.92	16	12.19	361	19.82	8	11.35	7
1959	26.05	373	37.70	41	4.72	1,154	8.19	14	11.65	365	19.11	7	8.11	5
1958	25.50	397	36.21	57	4.60	1,190	7.14	28	10.90	324	17.21	7	6.23	8
1957	28.25	290	38.35	47	5.29	739	7.63	26	11.13	283	15.77	12	7.45	7
1956	21.90	333	29.56	45	4.58	878	7.37	32	10.97	195	15.99	9	6.97	4
1955	20.58	336	25.44	41	4.23	990	6.67	35	9.00	150	10.53	8	4.13	2
1954	(n)*	277	(n)	28	(n)	1,002	(n)	(n)	8.34	116	10.48	6	5.18	1
1953	18.29	366	17.96	29	3.21	1,159	4.33	37	9.29	80	10.50	6	...	...
1952	12.89	434	13.45	55	3.08	1,422	4.64	52	8.79	101	9.00	9	...	...
1951	10.89	372	13.19	48	2.58	2,017	2.78	149	8.26	113	8.83	11	...	...
1950	8.96	387	10.67	42	2.76	2,581	2.38	210	7.10	118	9.61	8	...	...
1949	9.40	478	12.80	47	2.26	3,240	2.38	306	6.73	96	10.30	6	...	...
1948	5.86	517	15.38	42	1.50	2,774	1.31	553	5.92	61	9.11	6	...	...
1947	5.57	589	3.99	103	2.11	5,009	1.47	494	8.18	45	9.44	6	...	...
1946	6.38	422	4.51	77	2.68	3,609	3.65	274	8.25	44	10.54	5	...	...

[1]Cost-share has been deflated by the prices paid by farmers for inputs used in production including wages and interest, 1957-1959 = 100. Economic Research Service, The Farm Cost Situation, FCS-34, May 1963, p. 2.

*(n) = not available.

Source: See Table 7.

The relationship between cost-share and quantity applied will be indicated by only fairly sizable year to year changes in cost-shares, since minor shifts are likely to be caused by random changes. Within a given state, certain areas will tend to have different practice costs, and random shifts in the practice from areas of relatively low costs to areas of high costs could result in an increase in ACP costs without increasing practice use. Before the response elasticity can be measured, responses for reasons other than shifts in cost-shares should be eliminated. This involves specifying those years of major policy changes or wet weather.

The years 1946-48 and 1952-54 will not be used in the analysis as these were times of major changes in national policy. These changes have been described in earlier chapters and are significant enough to destroy the expected relationship between the acres drained and cost-shares. The period 1946-48 involved changes in program objectives, total appropriations and program regulations. During the latter period, 1952-54, technical service for ACP was turned over to SCS, a new administration took over ACP's operation and the package practice approach was initiated. The data also indicates that these policy changes affect the relationship between cost-shares and acres drained as they tend to move in opposite directions.

Underground Drainage

Policy changes during 1957 affected practice response as certain counties in Michigan began restricting the total amount of funds spent on underground drainage. This would explain why the response elasticity tends to be lower during 1956-57. The years 1958 and 1960 are also suspect years as they follow years of high rainfall, particularly during the critical planting months of April and May. Probably for this reason, the acres drained increased while the cost-shares declined or stayed about the same.

For underground drainage, this leaves four separate examples of fairly sizable changes in cost-shares when other variables were fairly constant; these occurred during 1949-50, 1950-51, 1955-56 and 1961-62. During two of the four years, the cost-share decreased over 12 percent an acre while in the others it increased by about the same amount. The response elasticity was 0.6 and 0.7 for the two decreases in cost-shares and 0.6 and 0.6 for the two increases.[5] These four

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[5] $$E = \frac{\frac{Q_1 - Q}{Q}}{\frac{C_1 - C}{C}}$$

Q = the quantity of underground drainage applied with ACP assistance the year before the cost-share change

Q_1 = the quantity of underground drainage applied with ACP assistance the year of the cost-share change

C = the ACP cost-shared for underground drainage the year before the cost-share change

C_1 = the ACP cost-share for underground drainage the year of

responses are very close and indicate a response of about 0.6 is likely to prevail in Michigan for relatively small changes in cost-shares over short periods of time. In other words, a 10 percent change in the cost-share will probably bring about a 6 percent change in acres of ACP underground drainage between any two consecutive years, but due to changes in land quality this may not hold for another 10 percent change in the same time period or over a longer time.

If a change in cost-share policy were contemplated a rough prediction of the response could be obtained by using the following formula derived from the previous elasticity formula:

$$Q_1 = Q\left[1 + E\left(\frac{C_1 - C}{C}\right)\right]$$

Using 0.6 as the elasticity and 1963 as the base year, a 10 percent decrease in cost-share would mean about 38 thousand

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the cost-share change
E = response elasticity.

This elasticity formula was selected since the results can be directly applied to estimates of responses to changes in cost-shares. In other words, for an elasticity of 1, a 10 percent change in cost-share next year will indicate a 10 percent change in quantity, using the present year as the base. Other than this there is no a priori reason to select one elasticity formula over another. Unlike demand elasticity the price and quantity move in the same direction, hence the differences in elasticities calculated using different base points tend to be insignificant. This was borne out by the data as only in one case did the elasticities calculated by the alternative procedures differ by more than 0.05. And for changes in cost-share of 10 percent or less the difference was even smaller.

acres would be drained, other things being fairly constant. A 10 percent increase would mean a corresponding increase in acres drained to over 43 thousand acres.

Open Drainage

Changes in the institutional and weather variables have had a similar effect on open drainage. Therefore, the same years eliminated from the analysis of underground drainage should also be left out for open drainage systems. Even with these years eliminated, the relationship between cost-shares and acres drained is not very often positive.

Only during 1959-60 did a sizable increase in cost-shares lead to an increase in acres drained, and this is one period eliminated due to abnormal weather. Here the response elasticity was only 0.4, indicating that a 10 percent increase in cost-shares will bring about a 4 percent increase in acres drained. However, if 1959 had not been a wet year there may not have been any response.

Negative elasticities were obtained in other years as the cost-share had doubled since 1946, while the acres drained have been cut over twentyfold. Only during 1960-61 and 1962-63 did sizable cuts in cost-shares occur but neither brought about a decline in acres drained. This could indicate that cost-shares are too high or have little influence on practice use. An explanation of these long term trends is that all the low cost open drainage sites have already

been installed leaving only the high cost sites. Another explanation might include a decline in use of open drains. During the early fifties SCS became responsible for technical service on ACP practices and this may have put a limit on the number installed due to a limited number of SCS personal available to approve practices or higher standards set by SCS.

In comparison with the cost-shares and the acres drained in the United States, payments in Michigan have been from 1.06 to 5.25 dollars more per acre and acres drained in Michigan have declined from 553 thousand to 10 thousand during 1948-62. This would tend to support the proposition that in Michigan only high cost sites remain and higher cost-shares may be necessary to increase the installation of open drainage systems. But before use rates are increased, the additional cost-share necessary must be justified by the benefits accruing to the nation and not the farmer. It is likely that the additional cost-share necessary to induce greater practice use may exceed the additional benefits, particularly if all the prime sites have been drained.

Forestry

The forestry practices have not shown as definite a trend in changing land quality as did the drainage practices, particularly the open drainage practice. Both the acres covered and the cost-shares have increased for forestry practices as compared to open drainage practices, where the acres

declined drastically while the cost-share increased. This should be expected because the drainage practices have been applied to many more acres than have the forestry practices, one of which was not initiated until 1954. Changes in cost-shares may also be much more important for the forestry practices as they are much less profitable than the drainage practices.

Beginning in 1960, the cost-share per acre in the United States increased and the quantity planted declined, possibly due to changing land quality. In other words, the land with the lowest opportunity cost has been planted to trees and the cost-share may have to be raised if the quantity of trees planted under ACP is to be maintained. Another explanation might be that entrepreneurs have found the tree planting practice to be unprofitable, particularly when compared to alternative land uses. Both explanations indicate that if the cost-shares were to stay the same, tree planting would decline unless a change in government price support programs lowers the opportunity cost of more farmland.

The cost-shares for tree planting in Michigan has been about 1.50 to 8.00 dollars higher than the average for the United States. The quantity planted declined in both Michigan and the United States during 1952 and 1953 but the subsequent increases lasted until 1957 in Michigan, as compared to 1959 in the United States. In the late fifties and

early sixties the decline in quantity planted was 45 percent in Michigan and 40 percent in the total United States, while cost-shares rose by 20 and 30 percent respectively. The increase in acres planted during the middle fifties was not quite 50 percent in Michigan as compared to over 450 percent in the United States.

In addition to these sizable changes in Michigan, numerous minor shifts in cost-shares are associated with both increases and decreases in acres planted or improved. Since these minor shifts do not occur during years that the percentage of cost paid by ACP was increased, they were assumed to have been caused by random shifts or changes in the institutional structure. The measurement of response elasticity was, therefore, restricted to the years where the percentage cost-share changed. Two changes in the cost-share percentage have been tried in Michigan. The first, in 1955-56, affected both forestry practices, while the second, in 1959-60, only affected the forestry improvement practice. The initial change was from 50 percent of the cost to 75 percent, while the latter brought the cost-share to 80 percent.

Depending on the lag assumed between the increase in cost-share and the increase in acreage planted, the response elasticity could have several values. Taking the tree and shrub planting practice first and assuming no lag, the response elasticity is 0.4. If a one year lag is allowed,

the elasticity is raised to 1.1. The former means a 10 percent increase in cost-share increases acreage planted by 4 percent, while the latter means a 11 percent increase. This is a significant difference and brings out the importance of the possible lag.

The lag could be caused by a delay in disseminating information concerning the increased cost-share, or it could be caused by a lack of funds. In certain counties, a big increase in both cost-shares and the quantity used may cause a shortage of funds. Some farmers may have to wait a year or more to obtain the desired ACP payments.

Considering the response of the other forestry practice, improving tree stands, the same question about lag response appears. When no lag is assumed, the response elasticity between 1955-56 is 1.6 and during 1959-60 it is 1.0. For a one year lag, the response elasticity goes to 2.8 and 3.5 respectively. A 10 percent increase in cost-share could bring about an increase in acreage improved from about 10 percent to as much as 35 percent. Improving tree stands is, therefore, the most responsive practice of those measured.

Using 1963 as the base year and the conservative estimate of the practice's response elasticity, 1.0, a 10 percent increase in cost-share should increase the acreage improved to 8.4 thousand. A 10 percent decrease in cost-share should decrease the acreage improved to 6.9 thousand.

Were the larger elasticity of 1.6 used, the 10 percent change should change the acreage improved to 8.9 for an increase and 6.4 for a decrease. This gives a range of expected acreage improvement after a change in cost-share.

Taking into account the possible lag response, there would be a greater change in the acreage improved for a given cost-share change. A 10 percent increase in the cost-share would bring the acres improved to between 9.8 and 10.3 thousand acres in two years. A similar decrease would cause acreage improved to decline from about 7.6 thousand in 1963 to between 5.5 and 5.0 thousand acres in 1965. Once the elasticity is selected, then the cost or saving from a contemplated change could be compared with the social benefit or loss from the change in acreage improved.

Permanent Vegetative Cover

The next group of practices to be considered are those where changes in land quality should have much less of an impact on the practice's production function. The permanent vegetative cover practices could be affected as the lands having the lowest opportunity cost are covered with grasses and legumes. But the permanent vegetative cover may not last more than two or three years and the same acreage would be again eligible for payments.

The temporary vegetative cover practice lasts only a year or less and the same acreage would be eligible every year. The cost-share for sod waterways and liming practices are calculated per unit of practice, rather than per acre and would tend not to show the impact of shifts in land quality. The lack of prime sites for sod waterways may appear on the quantity side, as fewer farmers will apply the practice at the same cost-share. Liming is generally needed at least every eight years, so land once limed would again become eligible for payments and would not be permanently taken out of the acreage needing treatment.

Returning to the analysis of permanent vegetative cover practices, it should be noted that ACP has a specific objective to promote the establishment of additional vegetative cover as well as maximizing practices with enduring benefits. The permanent vegetative cover practices are of major importance because they comprise the largest group of practices considered to be fulfilling both of these objectives. Chapter VI showed how the share of ACP funds going for improvement and establishment of permanent vegetative cover had increased since 1954. Here the question is whether or not the acreage covered has increased and what impact the cost-shares have had on the acreage planted.

As mentioned in Chapter VI, the major permanent vegetative cover practice before 1954 was artificial seeding

and reseeding of pasture or range. After 1953, however, two permanent vegetative cover practices became important: (1) establishment of permanent vegetative cover and (2) improvement of vegetative cover. Two minor practices were also continued after 1953: (1) establishment of permanent vegetative cover on orchards or vineyards and (2) reseeding of rangeland.

When the two major permanent vegetative cover practices are grouped together, the 1954 policy change is shown to have reduced the total number of acres receiving ACP assistance for permanent vegetative cover practices. Over 6 million acres of pasture or range were seeded or reseeded in 1952, as compared to only about 2 million acres of established or improved permanent vegetative cover in 1954. However, the difference of 4 million acres may represent what farmers would do on their own and actually be a movement closer to fulfilling objectives. Still, it represents quite a drop in the application of practices considered as meeting the enduring benefit objective.

An encouraging sign is the steady increase in establishment of permanent vegetative cover, from less than 735 thousand acres in 1954 to 2.757 million acres in 1961 (see Table 28). This nearly fourfold increase was accomplished while improvement of vegetative cover increased from 1.47 million acres in 1954 to 2.37 million in 1956, before

Table 28. ACP cost-share and quantity used of selected practices in the total United States and Michigan, 1946-63[1]

	Establishing Permanent Vegetative Cover				Temporary Vegetative Cover		Sod Waterways				Agricultural Liming Materials			
	United States		Michigan		Michigan		United States		Michigan		United States		Michigan	
Year	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/Acre	1,000 Acres	$/1,000 Sq. Ft.	1,000,000 Sq. Ft.	$/1,000 Sq.Ft.	1,000,000 Sq.Ft.	$/Ton	1,000 Tons	$/Ton	1,000 Tons
1963	10.17	2,684	14.21	37	2.37	323	2.67	1,815	3.58	11	(n)	(n)	(n)	397
1962	10.69	2,747	14.25	39	2.54	313	2.35	2,016	3.90	12	2.34	17,160	2.85	336
1961	10.91	2,757	15.71	23	2.77	316	2.31	2,074	3.91	16	2.41	16,745	2.85	384
1960	11.54	2,455	15.22	10	3.01	163	2.40	2,010	3.88	16	2.40	16,249	2.88	326
1959	12.47	2,321	17.25	11	3.08	125	2.24	2,111	4.36	16	2.45	15,173	2.88	317
1958	12.09	2,314	13.16	11	3.77	146	2.20	2,129	4.38	24	2.32	16,845	2.87	425
1957	12.90	2,110	9.59	13	3.34	116	1.95	1,951	5.36	17	2.34	15,920	3.06	428
1956	13.38	1,673	9.12	17	5.17	81	2.00	1,968	3.72	11	2.27	16,516	2.83	410
1955	13.04	1,055	9.05	8	4.97	46	1.56	1,553	3.23	10	2.24	15,126	2.69	427
1954	12.47	735	9.49	10	3.28	22	1.17	1,466	2.85	8	2.19	12,489	2.68	247
1953	4.80	121	....	..	1.74	528	1.06	1,810	1.32	6	2.17	15,136	2.08	480
1952	4.22	192	....	..	1.66	783	1.13	2,212	1.12	7	2.04	21,437	2.01	536
1951	4.20	242	....	..	1.74	726	1.15	1,864	0.87	17	2.10	21,452	1.85	525
1950	6.44	360	....	..	1.92	735	0.76	2,001	0.84	7	2.08	23,304	1.94	525
1949	5.73	211	....	..	2.01	633	0.69	2,387	0.63	17	2.09	24,434	2.07	688
1948	3.49	180	....	..	1.68	532	0.72	1,603	0.60	12	1.68	22,285	1.88	708
1947	4.54	279	....	..	1.85	505	0.91	1,541	0.92	6	2.48	29,286	2.64	905
1946	(n)*	161	....	..	2.11	458	1.01	1,353	1.06	1	3.07	28,576	2.96	970

[1]See Table 27.

*(n) = not available.

Source: See Table 7.

declining to 2.0 million acres in 1963. The emphasis on establishment of permanent vegetative cover, thus, helped increase the acreage planted during 1954-61.

To obtain these increases in establishment of permanent vegetative cover practices, what increases in cost-shares were necessary? Before comparing cost-shares, it should be noted that the practice previous to 1954 did not include the cost of liming or fertilizer, while during 1954-63 the cost of minerals was included as part of the practice cost. Since 1954, the minerals have accounted for about 55 percent of the costs of permanent vegetative cover in the United States. With these costs of minerals taken into consideration, the cost-share is shown to have increased only slightly. The initial increase probably came about for two other reasons: (1) assistance no longer could be obtained for applying only fertilizer and liming, but one could get both by putting in a permanent vegetative cover and (2) with the de-emphasis on temporary vegetative cover the permanent vegetative cover provided a reasonable practice to take up some of the extra money not used for temporary cover.

In Michigan during 1954-63 large changes in cost-share per acre did not seem to bring about large changes in acres planted under ACP (see Table 28). Even if one hypothesized a lagged effect in Michigan, the high rates of 1958-63 did not appear to increases acreage planted until 1961.

But this increase was due for the most part to the change of administrations and special emphasis on the permanent vegetative cover practices. Cost-share and acreage planted in the total United States does not even suggest a lag relationship, as the cost-share has been going down while the acreage planted has gone up.

All but one response elasticity in Michigan would be negative, due to the policy changes that increase use without increasing the cost-share. Only during 1959-60 did the acreage planted decline in response to a decline in cost-share. Here the response elasticity brought about by the 2.03 dollar decrease in cost-share was 0.5. This indicates that a 10 percent decrease in cost-share would cause a 5 percent decline in acres established. Using 1963 as the base year a 10 percent decrease in cost-share would cause the acres established to decline to 35.5 thousand assuming other things fairly constant.

Another possible explanation of the relationship between cost-share and acreage planted may be that the state or county development groups want to spend not more than a certain amount of appropriations for permanent vegetation. And when the acreage is increased, the cost-share per acre must decrease and vice versa. The policies of the state and county development groups and the ASC committees, therefore, could have more impact on practice use than the cost-share.

Temporary Cover

The alternative to permanent or enduring practices is temporary practices. As was shown in Chapter VI, the share of ACP funds going to these practices declined sharply during 1953-54, because of a new emphasis on permanent practices under the package practice policy. A major proportion of the temporary practices were the temporary vegetative cover practices. These temporary cover practices in Michigan show that the acreage covered can be increased while decreasing the cost-share.

In 1954, when the cost of fertilizer and lime was first added to the cost of establishing temporary cover, the cost-share first increased slightly but has declined since 1956 while the acreage covered has steadily increased (see Table 28). Fertilizer and liming costs amount to more than 50 percent of the cost-share, so that the cost-share did not really change between 1953-54. And before 1954, the relationship was very similar to that after 1954, as decreases in cost-share were associated with increases in acres covered. The one sizeable increase in cost-share of 1.69 dollars per acre during 1954-55 was associated with an 111 percent increase in the acres covered. But a year later, 1956-57, a 1.83 dollar decrease in cost-share was associated with a 43 percent increase in acres covered. This helps illustrate that the temporary cover practices in Michigan have not

primarily been influenced by the cost-share but by program policy.

The acreage covered has increased in response to a lessening of the restrictions on payments for temporary practices. In the sixties, the promotion of the temporary practices has almost doubled their use while cost-share has declined. The result of such a policy is to move away from the program objective of increasing practices with enduring benefits, although it increases participation and fulfills an objective of the state and county ASC committees.

Sod Waterways

The cost to ACP of establishing sod waterways should also be considered for two separate periods. The package practice approach added several inputs to the cost of sod waterways, so the costs are not comparable before and after 1954. The same years that were eliminated from the analysis of open drainage systems will be dropped from the sod waterways' analysis, as the weather and general policy changes have had similar affects on its use.

The only sizable cost-share change for sod waterways in Michigan not eliminated from the analysis occurred during 1956-57. The response elasticity from the 1.64 dollar increase in cost-share was 1.0. A 10 percent increase in cost-share will bring about at least a 10 percent increase in quantity established. If this estimate of elasticity is

accurate, establishment of sod waterways could be brought back up to the 1962 level in Michigan with a 10 percent increase in cost-share, using 1963 as the base year.

Agricultural Lime

Turning to the last group of practices to be evaluated, application of agricultural lime, the cost-share per ton has been about the same since 1946, although between 1948 and 1953 it was slightly lower than during the other years (see Table 28). In fact, it has been too stable to obtain any meaningful estimate of the response elasticity. In the total United States the only important changes were in quantity, which dropped from almost 21.5 million tons to 15 million tons in 1953 and to 12.5 million in 1954. This was followed by a rise to 15 million tons in 1955 and by 1962, 17 million tons were applied under ACP as a trend toward increased total assistance for liming appeared to start in the sixties.

Two reasons can be cited for the initial decrease in quantity of lime subsidized and its subsequent increase. First, in 1953 a cut in ACP appropriations along with a new administration was probably responsible for the initial decrease. Second, in 1954 the new package practice approach with requirements for soil testing along with a cut in appropriations brought about the second decrease. Then in 1955, as total appropriations were increased, lime sales under ACP

rose to the level of 1953. The package approach and the Republican administration helped decrease the quantity of lime sold under ACP by around 5 or 6 million tons, while the reduction in appropriations caused a 3 or 4 million ton decrease. The exact magnitude of these changes is hard to determine, because of the difficulty involved in isolating the cause-effect relationship.

An earlier decrease in the quantity of lime sold under ACP occurred in 1948 as the result of decreases in appropriations and in the cost-share per ton. Total appropriations were cut by over 25 percent while the cost-share was reduced by 25 percent. Here, the reduction in appropriations, no doubt, brought about the decrease in cost-share and this combination decreased lime sales under ACP by about 7 million tons or 23 percent. Subsequent increases in the cost-share per ton brought both increases and decreases in the quantity used, making the relationship between the average cost-share and quantity applied unclear.

The cost-share for lime and quantity applied in Michigan show about the same changes as they did in the total United States. Michigan's responses to the policy changes and cuts in total appropriations were similar to those of the total United States. The higher average cost-share per ton along with a lower average quantity applied in 1954-62 as compared to 1946-53 might indicate a drop in program efficiency. However, due to the policy change in 1954

more lime is probably used as part of other conservation practices. The cost-share necessary to get a farmer to use lime for establishing a permanent vegetative cover is probably more than that needed to get him to apply lime before planting corn.

Summary

The response of practices to changes in cost-share are different and in some cases do not conform to the expected relationship. Shifts in variables assumed relatively constant and lagged responses may account for some of these negative relationships. Further experimenting with different rates of payments is still needed to obtain better estimates of response elasticities and to determine which practices would be used at the same level with reduced cost-shares. But if all practices are assumed to be of about equal value, the response data indicate more acres could be reached with ACP practices if the cost-shares were reduced on certain practices and increased on others. With estimates of response elasticities, administrators of ACP would have better guidelines for allocating their funds to obtain maximum practice use for a given expenditure.

Fulfilling Alternative Objectives

The last question to be considered is whether or not ACP, in trying to fulfill objectives other than ACP objectives, causes the program costs to increase without increasing practice use.

Small Farmer Aid

An example of ACP funds being used to fulfill alternative objectives is Congress' maintenance of the small cost-share increase as a method of helping the small farmer. Since, as indicated in Chapter V, farmers are usually unaware of the small cost-share increase, it does not induce them to use more of a practice. At best, ACP's 10 million dollar yearly expenditures under this provision supplements a farmer's income by 14 dollars a year. And it makes no difference whether a farmer farms 10 acres or 10,000 acres, he can still obtain the small cost-share increase if he receives less than 200 dollars in total ACP payments per year.

In a sample of farmers from West Central Michigan and the Thumb area the small farmers, farming less than 80 acres, used ACP from 1961-64 much less than did the bigger farmers; farmers farming more than 320 acres made the greatest use of ACP (see Table 29). A definite trend indicates that the bigger the farms the more likely the farmers are to use ACP. In fact, only 13 percent of the farmers with less

than 80 acres used ACP, while 69 percent of the farmers with 320 acres or more received ACP assistance.

Table 29. The distribution of ACP payments by size of farm in the South Central and Thumb areas of Michigan, 1961-64*

	0-79 Acres	80-159 Acres	160-239 Acres	240-319 Acres	320 or More Acres
Number of farms sampled	45	115	48	25	32
Number of farms using ACP	6	30	24	13	22
Percent of farms using ACP	13%	26%	50%	52%	69%

*The results are based on a 1 percent random sample, 265 farms, in the South Central and Thumb areas of Michigan. Data were not available for sixteen of the farmers in 1961.

In the United States the average size of farms participating in ACP was 358 acres as compared to 254 acres for all United States' farms (see Table 30).[6] Before 1954 the average size farm participating was only 285 acres, but the change to the package practice raised it to 359 acres as the policy change benefited the larger farmers at the expense of

[6]This comparison is based on ACP's definition of a farm, as contrasted to that in the Census of Agriculture.

Table 30. Average size of ACP participating farms as compared with all farms in the United States (1948-63)

Year	Average Acreage of All Farms	Average Acreage of Participating Farms
1963	254[1]	358
1962	247[1]	351
1961	242	356
1960	235	380
1959	233	386
1958	231	371
1957	232	361
1956	232	360
1955	231	361
1954	227	359
1953	226	285
1952	227	270
1951	224	275
1950	219	270
1949	216	263
1948	214	260

[1]Estimated size based on past trend of total farms as defined by ACP. Total number of farms in 1962 was estimated at 4.9 million and in 1963 at 4.8 million.

Source: See Table 7.

the smaller ones. By 1959 the average size of participating farms was 386 acres as compared to 233 for all farms. Then, during the sixties the trend was reversed and the average farm size dropped to 358 acres by 1963. Both the increase in 1954 and the decrease in 1961 were of a different magnitude than the changes in total farm size, which has increased at a fairly slow but steady pace.

This evidence indicates that ACP tends to be used considerably more by the larger farmers. If this is true, then the small cost-share increases are likely to be accruing to these larger farmers. Hence, besides increasing costs without increasing practice use, it appears that attempts to fill this alternative objective are not obtaining the desired results.

There are other important implications that can be drawn from the evidence indicating larger farmers tend to make the best use of ACP. If ACP is effective, it will probably raise input prices and reduce product prices. But, the small farmer who receives fewer ACP payments cannot escape paying the higher input prices and receiving the lower product prices. In some cases, ACP may be hurting the small farmer more than it is helping him.

Income Support

The next alternative objective of ACP is income support for the farmer, which may also increase ACP costs without increasing practice use. In fact, it is likely to be more costly than the small family farm objective, for the amount of cost-share over that necessary to induce a farmer to use an ACP practice could be considered an income support, since it serves no other purpose. Under the present program set-up it may be necessary to give a substantial income support to some farmers in order to induce others to use a practice. In these cases, the income support might well be included as part of the cost of inducing the last few farmers to use the practice. This would be particularly true when comparing the costs and benefits from an increased cost-share.

Raising the cost-share rates to induce low income farmers with insufficient capital to use a practice can also lead to substantial income support to the rest of the farmers using the practice. Until this year, if a county offered 75 percent cost-shares for a practice, all farmers would receive the same rate.[7] If a 50 percent cost-share

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[7]". . . in situations where income prospects for the farmer or rancher are such that he reasonably could not be expected to bear as much as 50 percent of the cost of the practice. (A higher rate may be approved under this subparagraph (3) only where it is determined that the farmer or rancher is largely dependent on the farm or ranch for his livelihood, the estimated annual family income does not exceed $3,000 and an increased rate of cost-sharing is essential to

was enough to induce most farmers to use the practice, then they would obtain a 25 percent income transfer. This 25 percent could amount to 15 to 20 dollars per acre for tile drainage or 500 dollars per farmer if he received 1,500 dollars in total payments.

Another example of the magnitude of these income supports can be taken from the tile drainage practice in Michigan. In 1957, ACP in Michigan reduced the cost-share percentages for tile drainage from 50 to 30 percent in eight counties. During 1957-59 the average yearly ACP expenditure on drainage in these eight counties was 960,000 dollars, of which approximately 90 percent or 864,000 dollars went for tile drainage. This means that about 2,880,000 dollars was spent in total on tile drainage instigated by ACP; of this total an extra 20 percent or 576,000 dollars was paid by the farmers due to the cost-share reduction. The 560,000 dollars was available to cost-share for other practices including more drainage. Because in these counties ACP still is unable to approve all requests for tile drainage payments and the return on drainage is high, it would appear that prior to 1957 some farmers were receiving a substantial income transfer or support.

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permit the farmer or rancher to carry out needed practices.) U.S. Agricultural Stabilization and Conservation Service, National Agricultural Conservation Program Bulletin (Washington: U.S. Government Printing Office, 1965), p. 4.

It should be noted that ACP is providing income support for a select group of input industries through increased sales. The upper limit of this increase would be twice the payments received by farmers, as ACP only pays on the average half the cost. Prime examples of industries receiving substantial payments are the limestone, fertilizer and tile industries. Also, some of these input industries are located in urban areas and many of the multiplier effects generated by their increased business do not benefit rural areas.

Increased Participation

Another objective, increased ACP participation, may have more influence on the distribution of funds than the over-all cost of ACP. During the sixties there has been an expressed attempt to get new ACP participants. But to the extent this objective is pursued to the exclusion of other ACP objectives, the cost of achieving a given practice use is apt to be raised.

In Chapter V it was indicated that an increase in temporary practices will bring about an increase in participation. By neglecting the objective of increasing the enduring conservation practices, the state and county ASCS committees can fulfill one of their objectives of increasing participation. And they can rationalize this policy on the grounds that if participation is increased, conservation and

land-use adjustment will also increase. But in effect, what they have done is emphasize the less expensive temporary practices and reduced the payments per farmer, thus spreading the funds over a larger number of participants.

The relationship between the proportion of farmland participating in ACP and proportion of temporary practices is apparent in Iowa and Minnesota (see Table 31). The 1961 program in Iowa had temporary practices increasing from 4 to 38 percent, while farmland participation went from 17 to 53 percent. In Minnesota the program showed similar trends, as temporary practices went from 10 to 26 percent and farmland participation increased from 27 to 46 percent.

Decreases in farmland participation occurred in many states after the change to the package practice approach. The temporary practices in Iowa dropped from 40 to 6 percent and farmland participation fell from 60 to 31 percent, while in Minnesota temporary practices fell from 34 to 12 percent and farmland participation dropped from 61 to 32 percent. Other factors, such as decreased appropriations, helped reduce participation during 1953-54, but the decline in temporary practices had a substantial impact.

Iowa and Minnesota were selected to show the relationship between participation and temporary practices, since ACP in these states had recently undergone sizable shifts in the proportion of temporary practices while other variables

Table 31. Percent of farmland on ACP participating farms as compared with the percent of payments used for temporary practices in Iowa and Minnesota (1951-63)

Year	Iowa		Minnesota	
	Percent Farmland	Percent Temporary Practices	Percent Farmland	Percent Temporary Practices
1963	41	18	23	3
1962	43	25	32	10
1961	53	38	46	26
1960	17	4	27	10
1959	15	4	26	9
1958	27	8	29	10
1957	32	21	31	12
1956	29	7	40	12
1955	27	5	30	12
1954	31	6	32	12
1953	60	40	61	34
1952	70	41	58	31
1951	73	45	53	31

Source: See Table 6.

were fairly constant. A 1 percent increase in temporary practices does not bring about a 1 percent increase in participation, but any sizable increases in temporary practices will mean an increase in participation. If the ACP administration wants to increase participation, one way would be to encourage the use of green manure or other temporary practices. In many cases, these are the practices farmers are already carrying out, therefore, some farmers are quite willing to take an income subsidy.

Summary

In essence then, as ACP funds are used to promote too many objectives, the cost of obtaining a given amount of practices tends to increase and ACP falls short of its explicit objectives. This, however, may be a common problem among federal programs as they are used to fulfill too many objectives and, therefore, really do not fulfill any. James Yoho and Allan Schmid observed a similar problem in the Area Redevelopment Administration (ARA). Here, a particular example was given showing how none of the objectives were fulfilled in ARA's attempt to meet too many objectives. They concluded that if one objective had been used, the program would have been organized differently and probably more successfully.[8]

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[8] James G. Yoho and A. Allan Schmid, "Area Development: Observations on a Failure," Journal of Farm Economics, Vol. 47, No. 2 (May 1965), pp. 468-70.

The same applies to ACP, a better designation of program objectives and adherence to these objectives would probably substantially improve performance. This is particularly true at the county level where many of the administrators find it difficult to define program objectives or feel they conflict with other federal programs' objectives. As was pointed out in Chapter V, these conflicts then lead to a development of alternative objectives.

In conclusion, ACP could have achieved the same practice use at a lower cost. How much lower is difficult to determine, though it may be quite substantial in certain areas. To move the program closer to its objectives and reduce program costs a number of program alterations are needed. Suggested guidelines and procedures for improving ACP performance are covered in the concluding chapter.

CHAPTER VIII

CONCLUSIONS AND IMPLICATIONS

This thesis has shown how a multitude of objectives have been imposed on ACP since its initiation in 1936. The original objectives were production control, income support and soil conservation, but during the war the major emphasis shifted from limiting production to increasing production. And since 1946, the major emphasis has been on conservation of land resources, with land-use adjustment receiving some emphasis during the late fifties and early sixties.

In addition to the present program objectives, alternatives have been interjected by Congress and those administering ACP. At the national level, the appropriation subcommittees have so restricted the USDA that, in essence, ACP policy formulation has passed from the Secretary of Agriculture to the appropriation subcommittees.

At the state and county level, prospects for program improvement are not much better. The formula for allocating ACP funds actually promotes the use of appropriations in any manner possible, with little regard for program objectives. Conflicts among ACP objectives and lack of guidelines for

program operation have helped push the ASC committees and those administering ACP into developing their own objectives.

The evaluation of ACP's distribution of payments shows significant regional differences in fulfilling program objectives. ACP in all but two of the eleven Western states uses over 50 percent of its funds to subsidize irrigation practices while claiming fulfillment of objectives on the basis of a low proportion of temporary practices. Many programs in the Midwestern and Lake states are using a high proportion of ACP funds for drainage and mineral practices, while in the Plains states the tendency is towards use of a high portion of payments for temporary practices. To illustrate, ACP in Missouri and Illinois used over 71 percent of the payments for minerals; in Indiana 81.6 percent was spent on drainage and minerals, while in North Dakota 48.8 percent went for stubble mulching. Finally, all but two of the programs in the Eastern states used over 50 percent of their funds on mineral practices; only in four states east of the Mississippi did ACP use less than 50 percent of its payments for minerals.

As indicated in Chapters III and IV, the problem is partially political as the appropriation subcommittees maintain practices not meeting ACP objectives, so that practices are available for all states to use. If the practices were limited to those actually meeting ACP's objectives, certain

areas of the United States might have trouble using their ACP appropriations; hence, ACP might lose support and votes. Each state development group can select any of the practices offered in the National Handbook. And with the present appropriations formula rewarding areas using all their funds, states tend to select practices they know farmers will use. Payments, therefore, become concentrated on a few practices which are profitable in each region.

Turning to a consideration of minimizing ACP costs, agricultural lime provides an example of how ACP has helped increase practice use. But in so doing, it has paid for the application of some agricultural lime that the farmers would have used without assistance. This was shown by the increase in agricultural lime sales without ACP assistance which went from 1 to 6.5 million tons during 1947-50 while total sales remained at about the same level.

Certain farmers in the South Central and Thumb areas of Michigan are receiving unnecessary continuous payments for the high return practice, tile drainage. Here, payments, in most cases, should be limited to once per farmer, since the returns are generally high enough to induce the farmer to use the practice without assistance. And at the very minimum, the cost-share should be reduced after the farmer has once received payments for tile drainage in areas of high returns.

The response for six practices in Michigan to cost-share changes indicates there is significant difference in practice response and certain practices appear to have a lag response. Further experimenting with different levels of cost-share is needed to obtain better estimates of "response elasticities" and to determine whether certain practices would be used in the same amount at lower cost-shares. But assuming all practices are of about equal value, the response data indicate more acres could be reached with ACP practices if the cost-share was reduced on practices with low response elasticities and increased on those where they are high. The response elasticities provide a guide ACP administrators could use in allocating their funds to obtain maximum practice use for a given expenditure. They would at least be able to estimate the response of practices to various cost-share rates. But in counties where funds are not limited, the stimulous for experimenting with cost-share rates is not present under the existing rules.

In attempting to fulfill alternative objectives, ACP has increased costs without adding to practice use. This is particularly true of the attempts to help the small farmers and provide an income support for farmers. As shown in Chapter VII, the small cost-share increase raised ACP costs by about 10 million dollars while payments or portions of payments above that necessary to induce a farmer to use an ACP practice may amount to a much greater increase in costs.

In summary, ACP funds are not being spent so as to minimize the cost of achieving a given practice adoption. At present, it is a combination conservation, production increasing and income support program which falls short of all objectives.

Improved Performance

A number of alternatives exist for changing ACP and improving its performance. Two that have helped move ACP closer to fulfilling its objectives are reduced appropriations and the use of a package practice approach. The change to a package practice policy in 1954 helped increase the use of permanent or enduring practices while reducing the funds used for temporary practices. It also assisted in reducing the share of ACP funds going for fertilizer and lime. On the negative side, the policy change helped increase the use of irrigation and drainage practices.

The two major cuts in appropriations in 1947-48 and 1953-54 had somewhat different impacts on ACP's performance. In 1947-48 the major impact of the cut seemed to be a reduction in the cost-shares and a decline in the total quantity of practices applied under ACP assistance. On the other hand, the 1953-54 cut only helped reduce the cost-shares and the total quantity of certain practices. The differential impact appeared to be due to the policy change which

gave some direction to the cut in appropriations. Since the cut in appropriations of 1953-54 seemed to have more beneficial effects than the 1947-48 cut, it is reasonable to conclude that a cut in appropriations will move ACP closer to fulfilling its objectives if a specific policy or guidelines are set forth.

The analysis of local program administration in Chapter V indicates that a cut in appropriations could provide a necessary stimulous for change at the state and county levels. Such a suggestion always brings forth a cry that it will curtail the good county and state programs that already have limited funds. This argument could be quieted by altering the formula for allocating ACP funds. The present formula helps promote the objective of just using up all the allocated funds without regard for program objectives. If the formula were altered to put major emphasis on how funds were used, then the counties and states using their funds on practices best fulfilling program objectives would not have their appropriations reduced. The states and counties using their ACP funds mainly for drainage, irrigation, or mineral practices would bear the brunt of the cut in appropriations. And in the present situation, ACP appropriations could be substantially cut without reducing the funds used for practices best fulfilling objectives, which presently use less than 40 percent of the total ACP funds (see Table 6).

Other modifications should include greater use of the package practice approach. This would involve dropping practices that by themselves contribute very little to conservation or land-use adjustment and only using them as part of another practice with high land-use adjustment or conservation benefits. To illustrate, payments for practices such as installing drainage and irrigation systems could be authorized only when the practice was shown to be a necessary part of another conservation practice or plan to prevent excessive soil erosion or water loss. This could be similar to the provision in the Wisconsin ACP Handbook that restricts tile drainage to "only those farmers which have applied all needed erosion control practices in accordance with the soil district program."[1] Such a provision uses the high return drainage practices as an incentive to get farmers to use erosion control practices.

Certain practices should be restricted by only allowing them to be used once per farmer. These would be practices where benefits to the farmer exceed the cost and ACP should at most be helping to acquaint the farmer with the value of the practice. They could be identified by determining practice returns and testing the frequency of ACP payments as done in Chapter VII. Practices for which

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[1]U.S. Agricultural Stabilization and Conservation Service, Agricultural Conservation Program Handbook, Wisconsin (Madison, Wisconsin: Agricultural-Craftsman Press Corp., Nov., 1964), p. 27.

farmers receive continuous ACP payments should be restricted in use, unless it could be shown their benefits to the nation exceed government costs and the returns to the farmer are not enough to cover his costs. Restricting payments is something that could be done at any level of administration and would help prevent unneeded ACP expenditures.

Varying the cost-share rates is another possible technique for reducing the ACP cost of obtaining a given practice adoption. The results are not conclusive, but the response of six ACP practices in Michigan to changes in cost-shares indicate this may be a powerful device for reducing ACP expenditures required to obtain a given practice adoption.

Other changes in ACP's rules could help eliminate part of the payments which are over and above that necessary to induce farmers to use a practice. An example is the very recent rules change that allows the ASC committees to make higher payments to low income farmers. Here, higher payments can be made to "low income" farmers who are unable to pay 50 percent of the practice's cost without having to offer the same increased rate to all farmers. Similar rules changes, making it easier for ASC county committees to offer higher rates to farmers in problem areas without giving them to all farmers in the county, would reduce the cost of obtaining a given increase in practice use.

But what are the possibilities for making changes and at what administrative level might they be implemented? First, any major alterations in ACP policy at the national level is very doubtful, unless a substantial change occurs in congressional representation. As shown in Chapter IV, the agricultural appropriation subcommittees prevent changes in ACP and it is doubtful ASCS would make any alterations, even if it could. As Chapter IV suggested, changes would have to come at the state and local level. But, as was pointed out in Chapter V, the stimulous necessary for changes at the local level is not present in many cases.

A change in the formula for allocating appropriations might have a slight chance of approval. Since the suggested formula would probably not reduce the appropriations going to southern states, due to their relative better use of ACP, the southern congressmen might not block the change. If ASCS could be convinced such a change in the formula for allocating appropriations is needed and the southern congressmen could see their possible benefits, the change might be made. Still, under the present administration one of two things might force change at the national level: (1) presidential pressure or (2) reduced southern influence on the agricultural appropriations subcommittees. The former is the most likely, judging from President Johnson's ability to obtain what he wants from Congress. But the probability

of either is not very high in the near future, as shown by the many attempts to change ACP that have been blocked in the past decade.

The possibilities for change and better fulfillment of program objectives are not much better at the state or county level without a change in the formula for allocating funds or other rule changes initiated at the National level. If the formula were changed such that it put major emphasis on how funds were used, then the method of allocating funds would actually promote fulfillment of program objectives, rather than simply promoting use of appropriations.

Even though the possibilities for major program modifications in the near future do not look very bright, the relative importance of ACP continues to decrease. Since 1955, ACP appropriations have fluctuated between 207.6 to 257.5 million dollars, while total funds going to programs primarily for conservation of resources have steadily increased from only 319.0 million dollars in 1955 to 887.6 million by 1964.[2] Hence, appropriations for other conservation programs have been increased, while ACP's have remained about the same.

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[2]This includes ACP, SCS, Soil bank and conservation reserve programs as well as the Forest Service programs, watershed protection and flood prevention and the cropland conversion program. Joint Economic Committee, Subsidy and Subsidy-Effect, Programs of the United States Government (Washington: Government Printing Office, 1965), Ch. IV, pp. 34-35.

Research on Conservation Programs

The increase in appropriations going to programs primarily for the conservation of resources points to a need for further research. This study shows ACP falling short of fulfilling program objectives, but what about other programs for conserving resources? Research is needed on each of the programs to determine comparative costs and returns, so the federal administration can determine how best to distribute funds to obtain the objectives set forth for these programs.

Better ways may be found to conserve resources; for example, education and extension service projects may do more to fulfill ACP's objectives than ACP. Cheap fertilizers, insecticides, herbicides, and other new inputs may be good substitutes for soil productivity and thus maintain soil productivity without conservation practices. Consequently, policies of obtaining cheaper fertilizer and insecticides and developing new technologies, such as hybrid corn, may be a better use of public conservation dollars than ACP. What are the costs and returns for various research and extension efforts of the federal government? The answer to this question would help indicate if the government's increased expenditure on extension and research of from 113.4 million dollars in 1955 to 259.5 million in 1964 is in the right direction and of the right magnitude.

Furthermore, what are the various ways of providing future productivity? As already suggested, perhaps conservation practices as promoted by SCS and ACP are not the cheapest way to provide for the future. Maybe it would be cheaper to let some lands erode away and when additional production is needed, bring new lands into production, increase the inputs used on non-eroded soils and/or reclaim the eroded lands. These are just some of the alternatives to consider before making any decision as to whether or not conservation of soil by ACP is the best way to provide for the future. Conservation tends to be considered the best way without investigating the consequence; what is needed is an analysis of the various alternatives.

Specific ACP practices need further study to help the state and county development groups in setting up their programs. If the development groups knew the various costs and returns of practices, they could better select practices and set cost-share rates. Specific conservation practice needs should be spelled out in greater detail. This would make it easier for the development groups to promote the practices with the highest conservation and land-use adjustment benefits.

Studies could be made in other states indicating the distribution of ACP payments much as was done in Chapter VI. This would help indicate obvious needs for changes in the

state programs. As suggested in Chapter, VII estimates of of practice "response elasticities" are needed for other states and practices. Accurate estimates of response elasticities would provide additional information for administrators deciding how to spend ACP funds. Also, how quickly is land returned to crop production after being planted to permanent vegetative cover with ACP assistance? Research may show this practice is not very permanent. Finally, irrigation and drainage practices definitely increase production, but what is the actual increase in surplus production from various ACP practices?

This thesis does not purport to answer all the questions concerning government resource conservation programs, but it does present a rather comprehensive look at the one program that has used a large share of the federal resource conservation dollars since 1936. The disturbing conclusion that ACP is not meeting its objectives and is difficult to change, brings out the importance of the political side of government programs. And this importance seems to indicate that any comprehensive analysis of alternative government programs will have to consider not only the past performance but the political and administrative constraints contributing to this performance.

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