ECONOMIC EFFECTS OF AGRICULTURAL PROGRAMS[1]

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Agriculture has come to require a good deal of attention in national housekeeping, a drift which has been world-wide in its scope, including both food deficit and surplus countries. Agriculture has been less successful than most other major sectors of the economy in coping with the rapid changes which came after the other World War. Notwithstanding the fact that agriculture has approximated more closely the classical ideal of open and free enterprise, it has not shown capacity to adjust itself. The troublesome twenties favored finance, industry, and labor, at least, with the illusion of well-being, while dwindling farm income and equity, the potion which was put to the lips of farmers, was bitter as gall. This drift toward more public housekeeping on behalf of agriculture set in soon after 1919. It passed through the stages of advice, assistance, and action. Not that there occurred at any one time a sharp break with the past, not even in 1933 when the New Deal came into command. The Federal Farm Board with its bold action program had just run its course.

Several features about public policies pertaining to agriculture are becoming increasingly plain. These economic policies are no longer passive. They cannot be described as primarily concerned with improving those rules of the game which would make a free enterprise economy freer. Nor are the difficulties that beset agriculture for which active policies have been invoked chiefly emergency in character. The notion of surpluses, droughts, floods, and relief may still be the popular notion of the nature of the farm problem but these would hardly stand as an adequate diagnosis. Instead of emergency policies, the turn has been sharply toward active, continuing, administrative controls. This has led to the development of a vast federal administrative organization and personnel with large federal appropriations at its disposal.

While there is increasing agreement that the economic affairs in agriculture do not run themselves and would not if they were left to do so, there are nevertheless many who would prefer to let the some six million farmers much more alone than has been the case in recent years. One of the major purposes of this paper is to set up criteria for ascertaining the economic effects of the action programs and administrative machinery vested in the United States Department of Agriculture, and assess the results to date. In a broader sense, the constellation of economic realities con-

[1] Reprints of this paper are filed as J-807 of the Iowa Agricultural Experiment Station, Iowa State College, Ames, Iowa.

In the formulation of this analysis I have benefited from the criticisms and suggestions made by my colleagues, A. G. Hart, L. G. Allbaugh, A. Kozlik, J. A. Hopkins, A. C. Bunce, C. M. Elkinton, R. Schickele, M. G. Reid, and W. W. Wilcox.

fronting the United States is such that we are likely to have more rather than less public management. There is no mistaking the handwriting as we mobilize for national defense, for clearly and of necessity more controls are being vested and centralized in government. Nor is that all; if it were, we might presume that this drift was essentially temporary. There are many signs, aside from defense, which indicate that more public management is ahead for agriculture. The further disintegration of international trade points in that direction. Until quite recently agricultural policies were based on the presupposition that the trade agreement program would reestablish foreign trade sufficiently to provide substantial market outlets abroad. But all this is now largely in abeyance. The prospects of the export trade returning to levels such as prevailed even during the twenties is now as remote as it is for investment practices to return to the normalcy of the Coolidge era. Past expectations must be discarded and new ones formulated. It may well be that the United States will be forced to establish much more control over its foreign trade than hitherto. This step alone would necessitate many more administrative controls with regard to the internal economy and especially that of agriculture.

Quite regardless, however, of the direction of this over-all drift in government control, the agricultural policies and programs which have been developed demand critical examination. They are here. They are a going concern. They consist of a whole series of federal administrative techniques designed to attain what are presumably economic goals. It is, therefore, appropriate to start by examining the functions of these administrative techniques in relation to the problems within agriculture and, further, to inquire as to the probable effectiveness of these and alternative means, both public and private.

Distinction Between the Resource and the Income Problem

To obtain a comprehensive view of pertinent agricultural affairs and going policies, it is necessary to sacrifice detail and considerable specific content at this stage. To gain generality, we start by classifying the agricultural problems of economic import which are continually present into two major groups: (1) The problem of the best allocation of resources, for which the necessary analytical procedures are well known; (2) the problem of the best allocation of income, not to be confused with the functional distribution of income which results from the flow of rewards to resources in the form of interest, rent, and wages paid to those individuals who possess the resources.[2] The principles that are necessary to solve this problem are less well developed.

[2] The concrete manifestations of public allocation of income may be in the form of "free" education, health services, school lunches, supplementary food to improve diets, vocational training, managerial advice, assistance in migration, old age assistances, and pensions, to suggest only a few.

Neither the resource nor the income problem as formulated above is peculiar to agriculture. Both are as fundamental to the economy of mining, transportation, professional services, et cetera, as they are to agriculture. What is important, however, is a clear understanding of the bases and the fundamental nature of the dichotomy which separates them. It will be one of the major purposes of this paper to demonstrate that the differences between the two categories of problems are basic and real not only for purposes of analysis but in the formulation of more rational agricultural policies and programs.

Because many of the more important limitations of present agricultural programs, as will be shown subsequently, are directly ascribable to the fact that there has been no clear-cut differentiation between the problem of allocating resources and of allocating income, it is necessary to establish the significance of this distinction. There is a deep-seated disposition on the part of both citizens and public servants, and of farmers and members of the administrative and policy-formulating personnel of the United States Department of Agriculture in particular, to look upon the economics of resource use and of income allocation as one and the same problem. What happens when this is done is that either one or the other of the following two extreme approaches usually results: (1) It is supposed that when the economic system is made to operate at "full" capacity, automatically and simultaneously the allocation of income to individuals and families in society will be solved; or (2) that in order to increase the income of those individuals and families with inadequate income it is necessary to raise the rate of payment to the resources which such individuals have to contribute to economic production. It should not be necessary to demonstrate the falsity of either of these two positions. On the one hand, it is all too apparent that the productive resources which many families, both in and out of agriculture, possess are too few and their productivity too small to earn for the families concerned an adequate income even when used at an optimum rate; and on the other hand, to enforce a price for any given resource which is higher than the value of its marginal productivity is to cause some of those resources to become unemployed. I hasten to add that economic experts are all too prone to concentrate all of their attention on the first category of these two sets of problems (that of the allocation of resources), quite to the neglect of the other. One cannot help wondering if there is not an implicit belief lurking in their unexplored "moral" presuppositions that somehow the allocation of income among individual members or families of society takes care of itself through the rewards which are paid to the owners of resources for their contribution to production.[3]

[3] Notably there are the writings of Professor J. B. Clark which have occasioned Professor Knight to remark: "More important, however, is the error of attributing any sort of moral significance to economic productivity. It is a physical, mechanical attribute, attaching to inanimate objects quite as properly as to persons, and to non-moral or even

Complementariness of Objectives

The agricultural programs of the federal government are in most instances trying to effectuate both a better use of resources and a better allocation of income. These two objectives are in some cases highly complementary to each other; and accordingly by attaining the first, a good deal is accomplished for the second.[4] In several important cases, however, these two ends are to a large extent inconsistent with each other. This simply means that as steps are taken to bring about an optimum use of agricultural resources, the income of farm people actually declines. It is at this juncture that "practical" policies become oriented towards the task of altering the rates of return paid for the service of agricultural resources in an endeavor to better farm income. The result is, of course, that resources become misused. It is this latter point on which I wish to focus attention. It is inherent in several of the leading features of crop production control, farm commodity loans and storage, soil conservation, and marketing agreements. Here we have, then, the compounding of the two problems which makes it essential for us to establish, first of all, the basic conditions which underlie the dichotomy which has been laid down. A treatment of these follows.

The necessary theoretical tools for analyzing what we have classified as the resource and the income problems are drawn from two wholly different sets of principles. The criteria for determining the best use of given resources are implicit in the principle of marginalism,[5] while the criteria for ascertaining the best allocation of income are inherent in considerations of general welfare. The schemes of analysis which pertain to the first are fairly well developed. These tools have undergone much refinement and they provide us with some of the best instruments available for understanding and solving economic problems. What is important is that they have been designed to solve the resource problem and that they are based on marginal analysis. Much less, however, has been done in developing an analytical framework for understanding the income problem, and the task of determining the claims of social justice, although recent work in this field has pushed back the frontier substantially. The institutional organization for doing one of these tasks has been predominantly private, whereas

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immoral as well as virtuous activities of the latter. The confusion of causality with desert is an inexcusable blunder for which the bourgeois psychology of modern society is perhaps ultimately to blame, though productivity theorists are not guiltless." *Risk, Uncertainty and Profit,* p. 179.

[4] For example, steps which help farm people to migrate from overcrowded sections to areas with better economic opportunities are of this type.

[5] "Economic theory is concerned only with the allocative aspect of economic behavior. Its entire argument comes under the single 'economic principle' that the total result is maximized through allocating means among alternative channels of use (each subject to a law of diminishing effectiveness) in such a way that equal increments of means yield equal increments of ends in all modes of use." Frank Knight in the *American Economic Review,* XXIV, June, 1934, 228.

to do the other, it must of necessity be essentially public in nature. It is plain that in the United States the administrative machinery for getting resources into operation has been primarily a private function done on farms, in workshops, small businesses, and giant corporations. But it is not easy to conceive of administrative machinery designed to cope and act in the field of allocating income which is not public in character. Underlying our institutional development is the widespread belief in the efficacy of free enterprise, which has of course greatly conditioned the development of the rules of business conduct and of legal and political institutions pertaining to production, trade, and commerce, while democracy, with its sharp accent on equality, has gradually come to pave the way for public action by taking cognizance of the income problem.

No one would deny the fact that within agriculture there are many families who earn wholly inadequate incomes measured by any reasonable criteria of social welfare. Many farmers are poor people. Most of them are "little men and women" with few resources outside of their own labor to contribute to economic production. Professor J. D. Black, reviewing the agricultural situation of March, 1940, wrote:

> . . . the case is clear that the incomes of a large fraction of the farm population are distressingly low. Two-fifths of the non-relief farm families of the nation do not have incomes of $780 . . . in terms of urban dollars buying power. . . . And within this limit are large blocks of farm people, in many places well concentrated, as in much of the South, who are living for the most part on incomes of less than half a thousand.[6]

Furthermore, given full employment for the economy generally and the measurably improved prosperity that this would bring, there still would be many families in agriculture, as well as in other occupations, who would not earn enough to give them an adequate income. The point is simply this: the problem of allocating income which confronts modern society will be appreciably reduced but not solved by getting the economic machinery into full gear. Or, to take a more restricted view, even when all of the kinks have been removed from agricultural production, thus reducing to a minimum production maladjustments, many of which are now of long standing, there will continue to exist within agriculture the unsolved problem of income allocation. This is not to minimize the importance of shaking the stagnation to which our economy has fallen victim and from which we are now being rescued by our efforts at national defense.

Productivity and Income

Why is it that most farmers and many farm leaders believe that the way to correct the low income of farm people is to make adjustments in produc-

[6] *Review of Economic Statistics,* May, 1940, pp. 69-70; cf. also National Resources Committee Study, *Consumers Income in the United States, 1938.*

tion, in marketing, and in credit? The reason is simply this: There exists a deep-seated, genuine belief that a more efficient use of agricultural resources will in fact increase farm incomes, closely coupled with the conviction firmly held that each farm family should earn enough for its living. Here we have the horns of the dilemma which confronts government in most considerations pertaining to economic policy, for this situation is not peculiar to agriculture but is equally applicable to matters in labor, finance, and industry.

No one who is at all close to the daily thoughts of people can be unaware of their strong conviction that an individual or family should earn enough to provide an adequate income. This notion has long had general social sanction. It is deeply imbedded in our standards of ethical values. It is out of this conviction that there has arisen the idea of a fair price, which, if it means anything, is simply that rate of payment which is sufficient to provide the recipient with an adequate income.[7] No one, I believe, would be disposed to argue that this notion of a fair price is based on the criteria which are necessary to facilitate an optimum allocation of resources. Furthermore, it is clear that this concept of a fair price holds whether it arises in a case of wages, prices of nonfarm products (page the old NRA!), or in interest rates. Here we have, if you please, the matrix out of which was born the notion of parity price in agriculture. Parity price, too, is a variation of the notion of a fair price, meaning simply a rate of return in terms of the price of cotton, wheat, corn, and tobacco which will provide farm families an adequate income.[8] Who is there that would contend that parity prices have been formulated with a view to facilitate the best use of agricultural resources?

Because parity prices were designed primarily with an eye to adequate income rather than to an improvement in the use of resources within agriculture, it is of course easy to condemn them as misleading criteria on which to stake economic policy, as in fact they are. But to stop at this point is not enough. Account must be taken of the fact that fundamentally parity prices are merely a special case of the much larger class of so-called "fair prices," which in turn are sanctioned in what is approved social conduct. Farmers and the pressure groups representing farmers are pressing their political case for what they consider fair prices, meaning thereby the right to "earn" an adequate income. To lose sight of this institutional background in appraising the policies that have been formulated by the government is to miss rather completely what is fundamental in any attempt to work out more

[7] The notion of adequate income is probably best conceived as having both a subjective and objective phase. To the individual it is subjective with expectations rooted mainly in past standards of living while to a community or society it may be objectively ascertained in terms of nutrition, health, education, and other criteria of social welfare.

[8] Meaning enough income to maintain the standard of living to which they are accustomed, which is the subjective connotation.

rational agricultural programs. We simply must start with the fact that much of the basic legislation which has been formulated to promote the welfare of agriculture reflects this deep-seated desire of farmers to earn an adequate income, hoping of course that at the same time these measures will help correct the bad allocations of agricultural resources that exist.

Because it is repugnant to people's sense of right and wrong not to be able to earn one's way in terms of economic productivity, the resistance to any separation of the resource and income problems becomes quite understandable. Nevertheless, the fact remains that analytically the two problems must be kept separate; to treat them otherwise can only lead to confusion. Moreover, as long as the two objectives are linked in the formulation and promulgation of policies, the results of such policies will, in the main, be unsatisfactory. It is fairly evident already that schemes which do not make the separation are likely to do more harm in upsetting the use of resources than they could possibly contribute in their income features. Accordingly, therefore, the necessity does present itself of finding ways and means of designing on the one hand programs which are directed to the problems of production, marketing, and credit, and another set of programs which aim at supplementing the income of farm families deemed to be too low,[9] if a more rational approach is to be made in dealing with the affairs of agriculture.

After outlining briefly the major sources of economic disequilibria impinging on agriculture, we will turn to a consideration of specific agricultural programs and at that point examine specifically those difficulties which have arisen as a result of not separating the income and resource objectives.

Disequilibria Pertaining to Agriculture

Before going further it is necessary to touch briefly on the particular circumstances which account for the economic disequilibria which confront agriculture. The more important of these follow.

The per capita income of farm people is affected adversely continuously by the persistently wide differentials in population growth between farm and nonfarm people.[10] These differentials in population growth are a source of important chronic maladjustments in the use of both human and material resources, between agriculture and other parts of the economy. While there was less awareness of the presence of this disturbing dynamic factor in earlier decades when rapid expansion in industry facilitated migration out of agriculture, nevertheless the economic effects were at hand. It has been the principal factor which has caused human resources employed in agricul-

[9] In terms of social welfare criteria.

[10] The paper by Howard Tolley, Chief of the Bureau of Agricultural Economics, appearing in this session treats in considerable detail the population problem in agriculture; accordingly only the barest reference is made here to this important aspect of the agriculture.

ture to be priced increasingly at a discount relative to wages in other lines of work. Moreover, because most of what farm people contribute to production is in the last analysis labor, fairly unskilled labor, and since they possess little equity in the capital which is used in agriculture, the adverse pressure upon rewards for farm labor has depressed substantially the income which farm people earn.[11]

Young men and women are one surplus farm crop which the rest of society not only continues to get free, but, because agriculture is continuously confronted with a surplus population, this situation operates to cheapen labor as a cost item within agriculture; and as a consequence the rest of us obtain our food and fiber at lower prices than would otherwise be the case. The economic disequilibria which have their source in the differentials in population growth pervade virtually all phases of agriculture.

Because there is no provision in the existing price mechanism for paying families for the capital inputs which they invest in bearing, rearing, and educating children, a perfectly good economic case may be made for developing some basis for compensation for these capital costs. In principle the whole matter could be put on a strictly economic footing. This would give agriculture a very considerable claim to additional income which it earns in a rigorous cost of production sense. This line of reasoning is submitted largely to allay the misgivings of those who prefer to avoid tackling the problem of income allocation because they are uncertain of the ground that this would get them onto. If one is apprehensive of social welfare criteria,[12] he has in the case of the population factor a very important consideration in which supplementary income might well be meted out along economic lines which would very materially add to the incomes of the very families now receiving the lowest incomes. However, a better way is to approach this problem in social welfare in terms of food, nutrition, health, and education and ascertain the value of each of these to society as a whole, which certainly does not rule out economic effects; quite the contrary, it places them in such a position that it is possible to decide whether or not to invest more or less in these items.

The balances within agriculture have been upset substantially by the contraction in the size of the market of cotton, wheat, tobacco, and also other farm products. The whole mental horizon of American farmers (also of economists!) had been one of expansion. The edicts of the Master on

[11] See John D. Black's discussion of farm income, pp. 57-59, in his recent article, "The Agricultural Situation, March, 1940," *Review of Economic Studies*, May, 1940. Professor Black points out that: "Perhaps a million farm people, youths mostly who would have moved to the city . . . did not do so. And since then, there has been no offsetting acceleration of movement such as occurred in 1921-26. This surplus has contributed to maintaining low farm incomes as well as wages; it has played a large part in the increase in the number of small and part-time farms since 1930."

[12] See the exceedingly provocative lectures on population policy by Gunnar Myrdal, *Population* (Harvard University Press, 1940).

the gain from the division of labor made possible by an increase in the size of the market have often received homage, for out of expansion came increasing returns and economic progress.[13] In agriculture for at least two decades the story has been one of shrinking markets. While domestic outlets for certain farm products have continued to expand because of population growth and rising standards of consumption, several major agricultural regions had developed their resources with an eye to world markets. Their retreat in the face of the disintegration of world commerce has in many ways overshadowed the agriculture of several important regions of this country. It has been one of the main sources of disequilibria within agriculture and between agriculture and the rest of the economy. Moreover, the probabilities are increasing that even less is to be expected in the way of outlets for American farm products abroad.

A third source of economic disequilibria pertaining to agriculture has its origin in the vagaries of nature on which agricultural production is so largely dependent. Drought and dust storms, floods and frost are symbols of the more dramatic incidences in the struggle that goes on in farming, between man and nature. The resources which farmers use are not amenable to the same nice control as they are in factory production. Out of these vagaries there come to agriculture many forms of economic risk and uncertainty. These beset farmers in several ways. The effects are as yet only vaguely understood. Both the crop insurance and storage programs are directed toward the solution of certain phases of these difficulties. The major maladjustments of the Great Plains have arisen in large part out of the uncertainties of nature as a productive agent.

Advances in applied technology is one of the most potent dynamic elements in modern agriculture. It is leaving a veritable host of maladjustments in its trail.[14]

Partly as a result of inertia and lack of technical knowledge but probably more largely because of inadequate incomes, many farm families in agriculture are engaging in farming practices which disinvest soil resource capital more than the dictates of commodity prices, interest rates, and known technology warrant. The real soil conservation problem arises largely out of the income problem much more so than is generally understood.

There are other sources of disequilibria which fall primarily within the province of agriculture. Most of these are more specialized and restricted in their effects, however. Disequilibria having their origins primarily outside of agriculture are fairly numerous. Some of them have direct repercussions upon agriculture which are more significant to the agricultural situation than those considered. There are, for instance, the faults in the

[13] Allyn A. Young, "Increasing Returns and Economic Progress," *Economic Journal*, Vol. 38, 1928.

[14] See a recent United States Department of Agriculture monograph, *Technology on the Farm.*

general price mechanism; it no longer appears to provide adequate indices of relative values. The efforts of Mr. Thurman Arnold to enforce the rules of free and open competition have direct significance to agriculture. Nor is unemployment to be considered of minor importance. The broad considerations underlying fiscal and monetary policy aimed at fuller employment of resources are of major import.

This, however, must suffice as a general backdrop. Keeping in mind the differences between the problem of getting our resources employed effectively and that of allocating income adequately, and also the more fundamental causes of economic disequilibria pertaining to agriculture, we proceed to an examination of the more specific features of the present agricultural programs. I plan to indicate briefly the nature of the administrative techniques which the United States Department of Agriculture employs and to examine the economic effects which these procedures have occasioned.

Crop Production Control

While crop production control schemes are a fairly recent innovation, at least on the grand scale in which they are being done, the economics implicit in these controls is fairly simple. These programs are based upon an application of the principle of production rationing.[15] They take two primary forms: (a) that of rationing inputs, and (b) that of rationing outputs of the farm. It is convenient, however, to further separate the rationing of inputs into two subclasses; namely, those inputs which are relatively durable, extending in the case of crop production over more than one crop, and those inputs which are transformed into products in a single crop year. Accordingly, we have the following types:

1. Resource rationing
   a) Inputs transformed into products in one crop year
   b) Inputs transformed into products over a period of crop years
2. Market rationing

Market rationing has been done by establishing quotas of the amount of product which the farmer may sell or process into salable products. The control of crop production under the AAA has been chiefly of the type 1-a or a combination of types 1-a and 2.

There are implicit in the control of crop production three kinds of economic effects; i.e., production, price, and income. The later two are, however, resultants of changes occasioned in production.

To see how this technique of the AAA has worked let us take the first type of rationing and sketch what happens when it is applied. Let it be assumed, for example, that the acreage which is allotted to a farmer for production of a given crop has been curtailed, and assume further, as is

[15] See my article on, "Capital Rationing, Uncertainty, and Farm Tenure Reform," *Journal of Political Economy,* January, 1940.

generally the case, that his price expectations for the crop take an optimistic turn because of the planned curtailment of output. Under such circumstances one of the following, or a combination of the following, lines of action is open to the farmer: (1) he may remove the poorest acres from production, (2) he may use better seed, more fertilizer, and take better care of the acreage he is allowed to crop, (3) he may employ the acres released by the allotment to produce substitute crops, or (4) he may use the acres taken out of the crop which is being reduced and improve his soil resources.

In more familiar economic terminology these alternatives involve the substitution of one resource for another (in the case of complementarity of two resources, the opposite of course would be true), the increase of one product at the expense of another product, and the substitution of present outputs for future outputs. Each of these is determined by its own marginal rate of substitution. In principle, therefore, the nature of the readjustments is readily determined. The application to actual situations, however, is exceedingly difficult because of the lack of accurate knowledge of the technical rates of substitution that actually apply in given types of farms.[16] Usually these have not been known with sufficient accuracy to predict results with much precision. Out of the experience of the AAA, however, there has accumulated a considerable body of evidence which provides a basis for estimating the nature of these substitution rates. It is now possible, therefore, to estimate within fairly reasonable limits the effects which rationing of land has upon crop production.

The technique which the AAA has employed has been to ration the crop acreage of given key crops. This has been done by allocating a specific acreage to each farm. The over-all conclusion is: In most types of farming there has been sufficient flexibility because of substitution to offset the anticipated reduction in production of any moderate cut in acreage. As a consequence the crop production features of the AAA have been quite ineffective. It is only when drastic cuts in acres were enforced that any substantial change in production has occurred.

The experiences in the case of corn illustrate how shifts within the farm have offset production effects of the cut in corn acreage. The acreage reductions called for under the AAA in 1937, 1938, and 1939 reduced the acreage put to corn, in the six central corn belt states, by 8 per cent.[17] Corn production, however, in these states actually averaged 17 per cent more than in the earlier years in spite of the cut in acres. Furthermore, because there was more acreage in other feed crops, the total feed supply was in fact much larger than formerly. Since weather plays such an important role in

[16] Expected rates are the bases for farmers' decisions. See my article, "Theory of the Firm and Farm Management Research," *Journal of Farm Economics*, August, 1939; and also, Professor Black's amplification in the August, 1940, issue of the same *Journal*.

[17] Compared to 1929-32.

determining the size of the corn crop of any given year, and because in each of the three years unusually favorable seasons prevailed, probably about one-half of the increase in corn production is ascribable to that factor alone. However, largely as a consequence of the AAA program which includes not only the reduction in corn acreage but also its conservation and benefit payments, rotations were substantially improved by the use of practices which improved corn yields. Corn was cultivated better and the improvements made possible by hybrid seed were rapidly adopted.

CORN PRODUCTION AND ACREAGE ADJUSTMENTS

	1928–32 average	*1937–39 average*	*1940*[d]	*1937–39 in per cent of 1928–32*	*1940 in per cent of 1928–32*
I. *Acreage*[a]					
United States	103	92	86	89	84
6 central corn belt states[b]	39	36	32	92	81
3 western corn belt states[c]	21	13	12	60	54
II. *Production*[a]					
United States	2,555	2,611	2,352	102	92
6 central corn belt states[b]	1,345	1,571	1,267	117	94
3 western corn belt states[c]	432	170	195	40	45

[a] 000,000 omitted.
[b] Iowa, Illinois, Indiana, Minnesota, Ohio, Missouri.
[c] Nebraska, Kansas, South Dakota.
[d] Estimates, production data taken from United States Department of Agriculture *General Crop Report*, October 1. Acreage data taken from *Crops and Markets*, August.

But this is not all. The AAA has induced an expansion in substitute crops, especially of soybeans and of the more productive legumes, with the result that even though corn production had been decreased, the total feed supply of concentrates and roughages combined would not have fallen even though the corn producing seasons had been normal.[18]

Finally it should be noted that as a consequence of the AAA corn program, partly because of the better rotations which were introduced as a result of the crop control features and partly because of the supplementary income which farmers derived through benefit payments, more capital has been invested in soil productivity. Land has been improved. The agricultural plant in the heart of the corn belt has become somewhat larger than it was before the AAA programs began. This is the longer-run effect. Instead of

[18] The range of substitution is, in the case of corn, not completed with the production of the crops. Most farmers have considerable latitude in the combination of feeds which they use. Accordingly, the conclusion seems fully warranted that a moderate reduction in the corn acreage allotted to corn belt farmers is not likely to have any effect upon the aggregate feed supply produced in that region. A more drastic rationing of the amount of land devoted to corn such as was undertaken in 1940 will change the composition of the feedstuffs available somewhat and may well reduce slightly for a year or two the amount produced. But even this more drastic cut in corn acreage in the corn belt is not likely to have any appreciable effect upon the type and volume of livestock produced. See W. W. Wilcox, *Livestock Production in Iowa as Related to Hay and Pasture* (Bul. 361, Iowa Agricultural Experiment Station), May, 1937.

shrinking the farm plant as was originally intended, at least by some who promulgated these programs, they have had the effect of facilitating plant expansion.[19]

The farmers in the wheat and cotton regions probably do not have at hand within the farm the many forms or wide range in which they may substitute and accordingly offset the effects of the rationing of cotton or wheat land.[20] The position of the corn farmer in this regard is probably unique. Nevertheless, the upshot is clear: the crop production control programs have confronted sufficient substitution of the type described to have made the efforts at control of production, ruling out the vagaries of weather, in the main, ineffective.[21] Drastic cuts in acreage in the first year or two do reduce production, but even in programs as drastic as those that have been followed in cotton, within a few crop seasons the total output recovers remarkably in spite of a sharp cut in acreage.

The economist might well ask at this point whether or not the AAA has forced uneconomic use of resources upon farmers in spite of the substitution which they found possible. The answer is an unexpected one. It did quite the opposite. Most cotton, corn, and wheat farmers were not using farm practices which gave them optimum results. There was much lag in adoption of the best known farming techniques which had been developed and since the AAA programs had the effect of hastening the adoption of precisely these better techniques, they have actually occasioned, on a good majority of the farms, what is in essence increasing returns by forcing a recombination of the factors and an introduction of newer and better farming practices.[22]

The conclusion, however, stands that the administrative techniques of rationing the use of land, unless applied in an exceedingly drastic form, are not likely to reduce production appreciably.[23] It must be borne in mind, however, that the AAA has other important features, particularly its emphasis upon soil conservation and its distribution of benefit payments, which have been an integral part of crop production control techniques but the effects of which may be treated separately, as is contemplated in this paper.

[19] For more detailed analysis of the effects of the corn program see article by Wilcox and Crickman in the *Iowa Farm Economist.*

[20] Given more time, for instance a ten-year period, a good deal of flexibility becomes available to cotton farmers. Resources may be redirected, and a "live at home" use of them substituted for cotton is an alternative frequently suggested.

[21] The effects of the high loan rates, especially in the case of cotton, are also involved here. Had there been no AAA acreage control the loans would probably have expanded cotton output considerably.

[22] This advance in production techniques, however, was probably more pronounced on the farms already using the better techniques than it was on those farms most in need of changing their obsolete practices; accordingly, the differentials separating the "poor" from the "good" farmers have been further widened.

[23] Here again the fact that the AAA was working against the "urge" of farmers to expand occasioned by the high loan rates, especially in cotton, must be taken into account.

COTTON, WHEAT, AND TOBACCO PRODUCTION AND ACREAGE ADJUSTMENTS

	Production (000 omitted)					*Acreage (000 omitted)*				
	1928–32 average	1937–39 average	1940	1937–39 in per cent	1940 in per cent	1928–32 average	1937–39 average	1940	1937–39 in per cent	1940 in per cent
Cotton[a] (*bales*)										
United States	14,667	14,235	12,741	97	87	40,541	27,518	24,406	68	60
2 western states[b]	5,690	4,316	4,155	76	73	20,003	12,027	10,649	60	53
3 delta states[c]	3,662	4,390	3,345	120	91	9,712	6,518	5,785	67	60
4 eastern states[d]	4,112	3,644	3,537	89	86	10,634	6,804	6,055	64	57
Wheat[a] (*bushels*)										
United States	865	854	792	99	92	60	63	53	104	88
4 hard winter states[e]	323	284	213	88	66	23	25	17	109	75
4 hard spring states[f]	206	164	219	79	106	18	15	13	82	74
3 soft winter states[g]	89	116	112	130	126	5	7	5	143	110
3 white wheat states[h]	90	98	86	108	96	4	4	4	93	89
Tobacco[a] (*pounds*)										
United States	1,427,174	1,596,004	1,268,912	112	89	1,872	1,788	1,437	96	77
6 states[i]	1,200,213	1,406,469	1,073,062	117	89	1,651	1,602	1,251	97	76

[a] Cotton data from United States Department of Agriculture *Cotton Report* as of October 1, 1940. Tobacco and wheat production data from United States Department of Agriculture *General Crop Report*, as of October 1, 1940. Tobacco and wheat acreage data from United States Department of Agriculture *Crops and Markets*, July, 1940.

[b] Texas, Okla.

[c] Miss., Ark., La.

[d] Ala., Ga., S.C., N.C.

[e] Kans., Nebr., Okla., Texas.

[f] N. Dak., Mont., S. Dak., Minn.

[g] Ohio, Ill., Ind.

[h] Idaho, Wash., Ore.

[i] N.C., Ky., Tenn., Va., S.C., Ga.

Farm Commodity Loans and Storage

World-wide depression and colossal crops mired the late Farm Board but this experience has not kept the federal government from reinstituting loaning operations. While the crop production control features of the AAA have held the limelight, commodity loans and storages have been much more significant in their economic effects. The droughts of 1934 and 1936 paved the way for the ever-normal granary; it appealed to nonfarm people as consumers. They expected that it would stabilize food supplies in spite of the vagaries of weather. Farmers, too, looked upon the plan with favor for it was plain to them that while storage stocks were being built up, the demand would be strengthened.

In the case of commodity loans and storage, it is not possible to turn to a simple set of economic criteria for testing the consequences of such programs; instead, the economics of storage presents a complex skein full of knots and loose ends exceedingly difficult to unravel. The complexity of the matter is readily seen when the alternative aims of storage policy are considered. From the point of view of the farmer, storage policy might be designed to (a) stabilize the annual income of farmers, (b) stabilize the prices of the crop, (c) stabilize the purchasing power of the farmer's crop, and (d) acquire the highest annual income for farmers; while from the point of view of consumers, it might be directed toward (a) stabilizing the standard of living of the consumers, (b) stabilizing the price of consumption goods, (c) acquire the highest annual purchasing power of consumers or maximize the total utilities of consumers.[24]

Broadly conceived, the aims of storage policy may be subsumed into two broad classes; namely, those which have the effect of altering the "distribution" of income and those which facilitate the allocative aspect of resource use, a classification following the dichotomy established early in this paper. Accordingly, storage programs may be employed either to transfer incomes from one group to another or to correct faults in the production, pricing, and marketing system. In the case of the latter, it becomes an instrument for obtaining more out of our agricultural resources, while in the former it is a scheme for transferring income from consumers to producers or the other way around. To decide, however, whether the interest of consumers should be favored at the expense of farmers or vice versa falls quite outside the province of economics. Such a decision is plainly a matter of ends; hence partakes of value judgments. But if the government decided on general welfare or on other grounds that the income of farm families need

[24] This classification of the aims of storage follows the analysis which has been developed in Dr. Adolf Kozlik's manuscript, "The Theory of Storage," growing out of his study on this subject the past year at Iowa State College. Dr. Kozlik's contribution to the economics of storage will be published soon. The aims of storage policy outlined above are not by any means exhaustive nor do they include all of the aims which Dr. Kozlik's analysis takes up. The interest of speculators, warehouse, and transportation interests are among those not included.

to be supplemented, economic analysis demonstrates that the storage technique is both an ineffective and expensive way of going about it. Storages are in fact wholly inappropriate for attaining such a goal. To use them for that purpose not only lessens the effectiveness of the production-marketing machinery but fails to effect any appreciable transfer of income in practice. There is accordingly some loss and little gain in using storages as a means to a solution of the income allocation problem.

This is not to infer that storages in the case of agriculture may not contribute substantially in bringing about improvements on the resource side. The plea here is simply that the two aims be meticulously separated because of the fact that storage programs are inappropriate in the case of one of these aims; and to attempt to use storage programs to effectuate income allocation will not only lead to bad results, but, what is more, it is likely to discredit the technique to such an extent that it will preclude using storages to improve the production and marketing system.

Let us turn now to what has happened in practice in recent years. Farm commodity loans and storage were made an integral part of the crop production control program. They were made one of the major sections of the 1938 AAA Act. Because they were made a part of the mechanism of crop production control, it has been presumed that the loans and storage operations would be safeguarded, thus avoiding the quagmire in which the Farm Board floundered. In the AAA Act, loans and storages are a part of an intricate mechanism involving parity prices, annual changes in supplies, referendums, and subsequent participation and compliance in the program to reduce supplies. It is now becoming apparent, however, that the crop control features have not provided enough protection because of the ineffectiveness of these controls in practice.

Although the loan and storage program was started at the bottom of the depression and although it has benefited from two history making droughts, the loan rates have been sufficiently high and production large enough to have resulted in an accumulation of stocks bigger than even the most liberal estimates of what is required for ever-normal granary purposes. On March 30, 1940, Commodity Credit Corporation had commitments outstanding totaling 950 million dollars. Half of these were tied up in commodities to which the corporation had title and the other half represented loans to farmers. The commitments to cotton amounted to one-half billion dollars, those to corn 300 million dollars, while wheat and tobacco and other crops reported much smaller figures.[25]

It is not easy to escape the conclusion that the present mandatory loan

[25] COMMODITY CREDIT CORPORATION LOANS, MARCH 30, 1940
(From *Agricultural Situation,* May, 1940)

Cotton	9,330,000	bales	$509,800,000
Corn	513,700,000	bushels	307,100,000
Wheat	106,000,000	bushels	75,600,000
Tobacco	194,000,000	pounds	39,800,000

rates specified in the 1938 AAA Act have given rise to loans which are out of line with the dictates of economic circumstances. The mistake that was made by the Farm Board is being repeated. It has happened under less spectacular and somewhat better conditions, and prospects are still relatively good that most of the accounts may be cleared. In principle, however, what has happened is clear. The storage technique among other aims has been employed to increase the current income of farmers at the expense of (a) curtailed consumption, (b) accumulation of stocks, and (c) lower farm income at some future date than would otherwise occur.[26] In practice, the storage program has been dominated by the aim of increasing the current income of farmers, thus attempting to do with storages precisely what they are not suited for. Undoubtedly a good deal has been accomplished in the use of loans and storages in the way of improving the use of resources, but this has been overshadowed by mistakes and losses that have come about because the two objectives have not been kept distinct and separate. Mixing the two as is now the case not only results in some unnecessary loss to society but, also, it is frequently contrary to long-run interests of farmers.

The conclusion stands repeating. Storages are not an effective way of supplementing the income of farmers when that is deemed desirable as a part of public policy. The misuse of the commodity loan and storage technique is likely to discredit all storage operations and accordingly preclude the use of the technique for production where it has an important contribution to make. As will be shown in the final section of this paper, the loan and storage technique may well provide one of the most direct and usable procedures for administrative guidance and control of agricultural production that has thus far been devised. Should this prove to be true, it would appear doubly important that the technique be spared an ill-fated and undeserved death at the hand of public opinion.

Soil Conservation

As in the case of crop production control, it is possible to frame the economics applicable to soil conservation in fairly simple terms. The operational problem which presents itself is that of equating the expected marginal efficiency of the capital invested in soil productivity with the marginal cost of such capital. What we have, therefore, is the task of determining whether to disinvest or invest in soil resources, which in principle does not differ from disinvesting or investing capital in the form of farm equipment, fences, buildings, drainage, or livestock. It is true that the rate at which capital can be added or transferred out of soil resources varies widely with each type of farming. Agriculture presents special technical considerations which classical writers drew upon for many of their basic empirical assumptions. Notwithstanding, the inputs of capital associated with soil resources may take many forms. Some, like most fertilizers, are transformed into

[26] Unless the government assumes the "losses" by diverting the excess stocks.

products in a single year while others, for example, a well-constructed tile drainage system, may entail fifty or more years of use before the investment is exhausted.

However, this simple static input-output model, even when expanded to take account of the durable features of certain types of investments in soil resources is hardly adequate to get at some of the more significant difficulties which arise in the case of soil conservation. These difficulties are of the nature of divergencies frequently looked upon as differences between private and the public interest. A more useful classification for economic study, however, is to take the divergencies which arise in soil conservation and examine them as they pertain to (1) cost, (2) revenue, and (3) expectations. It must suffice merely to illustrate these three types of divergencies.

In the case of cost, it is now generally recognized that the marginal cost to the farmer of improving, maintaining, or depleting the soil is frequently not the same as is the marginal cost to the locality. In some instances it is less to the farmer whereas in others it is more; both types of situations are fairly general and of considerable importance. More specifically, many farmers have lowered their cost of production by using farming practices which induce both sheet and gully erosion. The resulting erosion has made farming more difficult on other farms which have borne the burden of the soil wash and also it has contributed to the filling up of streams and harbors. Plainly, a farm operated under such circumstances is not held accountable for all of the costs which are actually incurred in the production of the crop. For example, the cost of dredging the harbors and streams and repairing the harm done on the land of other farmers which are occasioned by such farming practices is not borne by the crop which gave rise to these expenses. The converse of this situation arises when the cost of improving, maintaining, or reducing the rate at which the soil is being depleted is greater to a particular farmer than it would be if the cost were allocated to neighboring farms in accordance with the benefits which each receive from the investment. In the case of revenue, it is also clear that frequently the marginal revenue which a farmer obtains from a given investment in soil resources does not coincide with the true marginal revenue which such an investment produces. The most important instance of this type of divergency is rooted in the farm tenure institutional arrangements. As is often the case, the tenant would be warranted in making important investments, for example, in lime, terraces, and strip cropping in order to maintain or even build up the soil resources of a farm he operates, provided it were possible for him to obtain all of the benefits which would flow from such an investment. However, because of the insecurity of farm tenure, and because the tenant is not certain of obtaining compensation for unexhausted improvements of this nature, he usually is deterred from making the invest-

ment although the expected returns from it exceed substantially the going rate of interest. We have not as yet learned how to harmonize a one-year lease with a five-year investment.

The least explored, and probably the most important, of these three types of divergencies between farmers and other elements in society (other individuals, the locality, state, or nation) is that which arises out of the differences in expectations. To pursue and develop this topic adequately, it would be necessary to establish the fundamental role of expectations to both production and consumption plans of farm families. This, however, would take us too far afield; moreover, the ground has been quite fully covered elsewhere.[27] There is a second task, that of applying appropriate expectation models in examining the conservation problem. It is frequently said that farmers are notoriously optimistic; anticipations of a bumper crop and boom prices keep hope alive long after the invisible hand of submarginalism has started closing its grasp. Land is farmed hard—exacting from it more than it can stand—in order to postpone liquidation. There is no doubt that many significant divergencies in the expectations between farm families and the community with reference to prices and yields are the source of important maladjustments in the use of resources. But far more consequential is the part which low incomes play in shaping expectations which result in production plans that "exploit" the soil.

What have soil conservation efforts of recent years accomplished? The official figures of the AAA and SCS are not very helpful in making an appraisal. There are virtually no systematic studies which get at economic effects; therefore, it is necessary to depend on general observations, recognizing full well the limitations of such a procedure.

The major contribution of the AAA, SCS, and public efforts generally in the field of conservation has been to increase our awareness of the problem. The malady of soil losses creeps in on farmers too slowly to make them conscious of what is happening; as with hookworm or malnutrition, those affected usually have no knowledge of its presence. It has taken the shock of dust storms let loose by droughts and of mud left behind by floods to awaken farmers and others. The systematic "propaganda" of government, community agencies, and schools has done much to focus attention upon the misuse of soil resources. Should public efforts in behalf of soil conservation be discontinued, undoubtedly the main legacy of the efforts of the past several years would be found in the greatly increased awareness that people generally, and farmers in particular, now have of the problem.

Another accomplishment has been the advance in agricultural technology which has been induced by federal programs. As was indicated in the discussion of crop production control, farmers have lagged considerably

[27] See especially Hart, Hicks, and Kaldor.

in adopting the best-known farming techniques. The most advanced farm techniques permit farmers—especially in the corn belt, to a considerable extent in the cotton belt, and to a relatively limited degree in the case of wheat production in the Great Plains and intermountain states—to maintain soil resources or even improve them without foregoing income currently.[28] The AAA and the SCS have induced many farmers to adopt these more advanced farming practices. Much of the slack between what was known in technology and that which was put in practice has been taken up, especially on the better income producing farms. There has been, therefore, a real advance in applied technology partly ascribable to the efforts that have been made collectively in behalf of soil conservation. This gain is both real and significant to farmers and to society generally.

How much the federal programs have accomplished in correcting the misuse of soil caused by low farm incomes is not readily ascertainable. In the first place, the nature and scope of the relationships between soil exploitation and inadequate farm family incomes is not well understood. The situation probably is about as follows: (a) The income which many farm families earn is so small that they are forced by sheer necessity to deplete soil resources of the farm on which they are situated in order to increase their current income; that is, they disinvest soil capital in order to acquire at least "minimum" diets, shelter, and other elementary necessities. This along with lack of knowledge is the heart of the conservation problem, especially in the Southern States. (b) Many farm families in their effort to make capital available for education and other investments to improve the human agent find it necessary to disinvest their soil resources in order to obtain the necessary funds. This problem is of special significance because it can be shown readily that the type of investments involved in this situation, that is, expenditure for education, vocational training, health, and funds to facilitate migration to new opportunities, usually yield an exceedingly high rate of return, and yet it is quite impossible to obtain funds for this purpose in the capital market. No one would advance credit for these ends because there is no way of obtaining a "chattel mortgage" on skills, talents, and improvements in the human agent occasioned by such investments. As a result, the farm family with inadequate income to pay for these items has no choice except to disinvest its capital assets—these might well involve machinery, buildings, and livestock but more frequently they are in the form of soil resources—and transferring them into investments for developing their sons and daughters where the rate of return is usually much higher than in soil resources.[29] It does not seem

[28] W. W. Wilcox, "Economic Aspects of Soil Conservation," *Journal of Political Economy,* XL, 1938. It is possible, not probable, that since multiple factors are at work that even in the cotton and much of the corn belt advances in the technology have merely offset soil losses; thus hiding the true rate of soil depletion.

[29] The first step, of course, is to mortgage the farm, provided it belongs to the operator and his family. But in the case of the encumbered owner, the effects of capital rationing

that federal programs have been successful in getting at these phases of the conservation problem, except to the extent that farm incomes generally have improved measurably during the past seven years, partly as a result of the efforts of federal programs, but more largely because of the improvements in economic conditions all around.

In sum and substance, what the federal soil conservation programs have done is about as follows: (a) Considerable effort has been made to reconcile the marginal cost of maintaining soil resources to the farmer with the marginal cost to the locality. The most specific step in this direction has been the promulgation of soil conservation districts. (b) While there has been considerable agitation to correct the institutional faults in the prevailing farm tenure systems, relatively little has been accomplished thus far, chiefly because this is primarily a state matter. Here we have one of the more serious shortcomings of corn and cotton belt agriculture. (c) Relatively little has been done to lessen the adverse effects of low farm family income upon soil misuse.[30] This factor probably accounts for the largest annual soil toll. Its interrelationships with the conservation problem are only vaguely understood; certainly there has not been any direct successful attack thus far in governmental programs. (d) Real strides have been made in facilitating advances in agricultural technology and have led to better husbandry of soil. (e) And most important of all, as far as positive results are concerned, has been the advance that has been made in the awareness of farmers and of the public generally of the nature and extent of the conservation problem. The lack of knowledge of how to handle land is still a major obstacle to be overcome.

Supplementary Farm Income—Government Payments

There has been developed a series of administrative techniques to supplement the income of farm families through government payments. These payments are made directly by check drawn against the federal Treasury. They are of the nature of conditional grants allotted in the main on the basis of criteria designed chiefly to aid commercial farms in cotton, corn, wheat, tobacco, and rice agriculture. These payments have come to represent a sizable fraction of the total farm income in the cotton, corn, and wheat regions as may be noted from the data on the following page.

An analysis of the economic effects of government payments introduces many perplexing problems. In the first place, there is the question of the purpose of these payments. To what extent are they rewards necessary to induce farmers to make specific adjustments such as reducing the acreages

soon make themselves felt. See my discussion of this point in the *Journal of Political Economy,* June, 1940.

[30] The grants and aids provided by the AAA for specific farm practices have become increasingly more suitable to the needs of the small farmers and have come to have some merits in supplementing incomes of poor farmers.

of given crops and adopting soil conservation practices, and to what extent are they a means for supplementing the incomes of the recipients quite aside and in addition to rewards for sacrifices entailed in making adjustments? In the second place, there is the whole problem of establishing criteria for allocating supplementary income where the second of the two purposes indicated above is involved. And in the third place, we are confronted with the query, what are the effects of supplementary income upon (a) the mobility of resources, (b) rent and price of farm land, (c) the

PERCENTAGE OF TOTAL FARM INCOME CONTRIBUTED BY GOVERNMENT PAYMENTS[a]

	1936–38 average	1939
North Atlantic	0.8	1.6
Western States	2.6	6.1
South Atlantic	4.3	9.1
East and West North Central	4.6	9.5
South Central	7.7	17.3
United States	4.4	9.5

[a] Bureau of Agricultural Economics mimeo report of May, 1940, on state estimates of cash farm income and government payments by months January, 1936, to December, 1939.

Government Payments in 1939

PERCENTAGE OF TOTAL FARM INCOME REPRESENTED BY GOVERNMENT PAYMENTS BY STATES, 1939

Alabama	24.3	Nebraska	11.4	Minnesota	7.4	California	3.4
North Dakota	21.2	Kansas	10.9	Kentucky	7.3	Maryland	3.3
Mississippi	20.6	Iowa	10.5	Wisconsin	6.8	Florida	3.2
Texas	20.0	Missouri	10.2	Oregon	6.3	Vermont	2.8
South Dakota	18.6	Idaho	9.0	Washington	6.2	New Hampshire	2.2
Arkansas	18.2	New Mexico	8.9	Utah	6.1	Pennsylvania	2.1
Georgia	17.0	Arizona	8.8	Ohio	6.0	Nevada	1.7
South Carolina	16.0	Illinois	8.7	Delaware	5.5	New Jersey	1.5
Louisiana	15.8	North Carolina	8.4	Michigan	5.3	New York	1.0
Oklahoma	14.3	Wyoming	7.8	Virginia	5.3	Connecticut	.9
Montana	12.8	Colorado	7.5	West Virginia	4.4	Massachusetts	.9
Tennessee	12.0	Indiana	7.4	Maine	4.1	Rhode Island	.5

returns to the farmer for his labor and management, (d) the risk and uncertainty involved in farming, and (e) the attainment of ends which are considered necessary when incomes are supplemented by public action.

Government payments to farmers are a mixture of rewards for production adjustments and extra income. The federal agricultural programs have accomplished a good deal in each of these two fields. Those pertaining to production have already been commented upon in connection with technological advances, the implementation of certain soil conservation practices, and the curtailment of the acreage of specific crops. Those pertaining to supplementary income are reserved for this section. The two objectives,

however, have been tied together in that the farmer who participated in a program for the awards on the production side also received the extra income payments. During an emergency period, for example, in 1933 and 1934, when all of the agriculture of a region was being badly dislocated because of the price situation of the key crop of that region, the lumping of these two types of payment was both direct and realistic, and relatively little would have been gained in separating them. Such, however, is not the case under conditions such as prevailed in the last three or four years, because the farmers who have been induced to make adjustments in production are not necessarily the ones who are confronted with inadequate incomes.

Pyramiding of Government Payments on Farms with Highest Incomes

The 1939-40 Iowa Farm Sample Survey, which gives a cross-sectional view of Iowa agriculture, obtained data on government payments. These data, when classified according to net income, showed that Iowa *farm operators* received government payments as follows:

According to Net Income	Average Amount[a] Received in 1939
Upper third	$350
Middle third	179
Lower third	152

[a] From unpublished data growing out of Witt and Hopkins' study of low income farmers in Iowa.

Farm operators whose net income was below $700 in 1939 received on the average $127 of government payments. In none of the above figures is the payment to landlords included.

The Iowa farm business records for 1939[31] show plainly that government payments to farmers have been largest on the better farms in the best sections of the state earning the largest incomes. In the Big Creek Watershed in Decatur and Ringgold counties in southern Iowa payments[32] on 109 farms averaged $277 against $1,196 for 146 farms in central Iowa. The net farm income of the first group was $1,205 and of the second $4,212. These figures speak for themselves. It should be noted, however, that the Central Iowa Association probably represents the best farmers in that section of the state while the Big Creek route is more representative of all farmers in that section. But this fact only gives added weight to the argument that government payments as they are now being allocated do not effectively get at the income problem.

In principle, there is little doubt that government payments made conditional upon specific production performance should be kept separate,

[31] See Macy, Jensen, and Allbaugh, *Iowa Farm Business Records for 1939,* Iowa Agricultural Extension Service and Experiment Station co-operating, 1940.

[32] Since certain gains from corn sealing operations are included in the figures that follow, government payments as used here are not comparable with earlier tables.

both in analysis and in operation, from grants which are made conditional upon performances which are of the nature of consumption.[33] One of these focuses attention upon the firm and the other upon the household. One deals with the use and combination of resources and the other with the utilization of the social product. Accordingly, the criteria for making conditional grants aimed at production adjustments are based on wholly different fundamental criteria from those pertaining to adjustments in consumption. Because the firm and the household are so closely intertwined in agriculture, it might be presumed that little may be gained by treating

GOVERNMENT PAYMENTS INCLUDING INCOME FROM CORN SEALINGS OF SELECTED IOWA FARMERS

Farm Business Association or group	No. of farms	Average acreage	Crop acres	Payments received per farm	Payments per farm acre	Net farm income	Management return
Central Iowa	146	279	205	$1196	$4.29	$4212	$2085
Mississippi Valley	150	260	163	878	3.38	3554	1637
Northwest Iowa	156	251	190	843	3.36	3910	1905
Cedar Valley	142	248	162	705	2.84	3254	1417
Northeast Iowa	129	238	149	562	2.36	2799	1083
SCS Tarkio Area	128	190	121	452	2.38	2033	508
SCS Big Creek Area	109	234	102	277	1.18	1205	68

these two components separately. Even when it is desirable on analytical grounds to separate the two it is impossible in practice to do so. There is some merit in this line of reasoning because in practice it is exceedingly hard in the case of a farm to separate the decisions which affect the household plans from those which relate to production. Consumption and production on the farm are still very much an organic whole. Nevertheless, the processes associated with production are not only definable but distinguishable from those which involve consumption. The differences are made explicit when we turn to the criteria of each. Government payments aimed at adjustments in the use of resources relate to such features as land, crops, productivity, and to farm practices such as terraces, strip cropping, and use of fertilizer. When the aim of government payments is to supplement income, then the point of focus becomes one of performances which are associated with consumption; and since the interest of the public is involved, they very properly might become conditional upon performances with reference to diets, clothing, education, and socially desirable migration. This should make apparent the importance of clearly differentiating the aims to be accomplished because it determines the type of program necessary to distribute such payments.

When we turn to the question of what has happened as a result of the

[33] Meaning performances in adopting better diets, health facilities, education, etc.

government payments to agriculture in recent years, relatively little can be said. The reason is simply that no work has been done to ascertain the effects of government payments upon the consumption of farm families and, on the production side, upon the capitalized value of farmers' resources and upon the mobility of such resources. Undoubtedly, the effects have been quite mixed in that some of them have shown up on the resource and others on the income side. In some cases, land values and rents have increased as a result of the government payments;[34] in others this has not been the case. In some regions the rewards have gone to the human agent as a "premium" for management, whereas in others they have become imbedded in the value of other resources. It appears plain that the risk and uncertainty involved in farming have been measurably affected by the government payments. These comments at best merely suggest some of the important issues to be examined in any systematic study of the effects which government payments have had upon agriculture.

Positive Proposals

It is of the nature of knowledge that findings should lead to recommendations for action. In what has preceded I have examined the major features of the present agricultural programs except those which pertain to credit, marketing, and consumption. In addition, however, there are many lesser considerations which have some bearing upon agricultural affairs which have not come within the compass of this paper, but about which implicit presuppositions must be made in the proposals which follow.

The present crop production control features of the AAA should be discontinued in favor of other control techniques. A transition period will be required; it will be harder to change over to alternative controls in the case of cotton than in other crops. The transition will be the least difficult in corn belt agriculture.

The commodity loan and storage program should be shifted to deal strictly and exclusively with the allocative aspect of resources, which means that storage policy should not aim to effect income "distribution." This change in focus will entail rather fundamental reorientation in the expectations which farmers and farm leaders now have with regard to loans and storages. Administratively, the storage technique will have to be freed from any mechanical and rigid formula specifying loan rates in terms of any two, three, or even more variables, including the formulas based on parity prices. It will not be easy to make this shift because of the deep-seated public belief that more adequate farm incomes must somehow be "earned"

[34] There is reason for increasing concern on this score. Owners of land resources are getting more and more of the additional income paid to farms in government payments. In the heart of the corn belt some owners are replacing their tenants with a wage manager; thus collecting all the payments. Others, and more generally, are squeezing the tenant with higher cash and incidental rents.

through rewards meted out by the pricing process. Furthermore, it is not a change which the policy and administrative personnel of the United States Department of Agriculture may make without regard to the "canons of good policy" held all along the line, nor can farm leaders be expected to take this step until there is an understanding of the principles which are involved in solving this problem on the part of the rank and file of farmers.

Once, however, this shift in aims is made, I am convinced that this administrative technique which has been developed around the use of loans and storages opens the way for effective guidance and control of agricultural production on a level at which governmental action may successfully complement the essentially free enterprise economy of American agriculture. The loan and storage operations may then be employed to guide and direct the use of the nation's agricultural resources along lines which will optimize the use to which they are put.[35] This would require that the loan rates that are established and the storage stocks that are accumulated be determined by production, marketing, and consumption criteria, which would leave the task of supplementing the income of farm families to other procedures to be discussed below. In order to guide production effectively, it is necessary to announce the loan rate well in advance of the time that farmers start making plans for the production of the new crop.[36] By taking this step the government would introduce two new important considerations into agricultural production. In the first place, on the basis of the best knowledge and information that can be obtained by the central agency, a loan rate would be announced which would be effective for the forthcoming crop. This rate would be in effect the minimum price, and with sufficient storages it also would tend to be the maximum price, which would guide farmers in making their production plans. It would have a pronounced advantage over the present AAA procedure in that it would permit each farmer to combine his resources in light of the cost-price structure of his farm. The farmer, therefore, would maximize the output of his farm on the basis of the input-output ratios which confront him in his operations. He would accept the loan rate as one of the given conditions on which to base his plans. In the second place this action would transfer from the farm to the central government agency the task of bearing certain price uncertainties which arise during the time span that the farmer is in process of producing the crop.

Much of the inefficiency in the way land, labor, and capital are used in

[35] The notable exception will be in the essentially marginal areas. Loans and storages will not be effective devices for contracting agriculture in (say) the cotton or wheat areas; however, it is plain from experience that the crop control features of AAA were also least effective in these very areas. It will be necessary to use wholly different techniques to correct the kind of problems found in the large areas which are from time to time marginal or submarginal.

[36] With some modification, this technique is applicable to livestock plans and production. It is, in fact, even more important in livestock than in many other areas.

farming has its origin in the uncertainties which confront the farmer as he plans and carries through his production operations. These uncertainties are of two major classes: (a) those which have their origin in the economy outside of the farm and which are transferred to the farmer through prices at which he sells and buys; and (b) those which are specific to the resources of the farm which in the main have their origin in the vagaries of nature. Farmers are technically quite inefficient in making adjustments to bear the incidence of uncertainty because most farms are exceedingly small businesses and because the resources at the farmers' command do not give them the necessary flexibility for adjusting to unexpected change. But to the extent that farmers attempt to attain this flexibility, they occasion the inefficiencies referred to above.[37]

The proposal that the loan rate be announced a year or more in advance of the time the crop is harvested will place the burden of formulating expectations upon the federal government, which has at its disposal expert knowledge and information of local, national, and international conditions, the significance of which can never be accurately and adequately diffused to all farmers, no matter how well and how intensively the present outlook programs are done. This is neither the time nor the place to enter into a discussion of the many details that this proposal entails. There is, however, enough experience which has grown out of the Farm Board and New Deal operations to indicate that the government can make announced loan rates work when coupled with storage operations. Also, the gains and losses which would occur because of variations in crops and, also, but to a less extent, those arising out of changes in demand and technology may be handled so as to cancel out. The fact remains, however, that the most salient stumbling block to this proposal is the widely held belief that more adequate farm incomes must be "earned" through the prices which are received for farm commodities, which makes it exceedingly difficult to use loan rates to guide and direct production rather than to "distribute" income.

With regard to soil conservation, less emphasis should be placed upon direct controls which specify the nature of the farm practices which a farmer may use. The soil conservation problem is at bottom largely an income, institutional, and educational matter. Accordingly, more stress needs to be placed on those types of social engineering which will improve the institutions which determine farm tenure arrangements, credit facilities, the responsibility of the locality for group action in land use, and the knowledge of farmers. And above all it is necessary to take more positive action

[37] The present program of crop insurance gives promise of becoming a successful administrative technique for pooling and allotting the risks that arise out of the variations of weather. Gradually it will probably be possible to charge the costs of carrying these risks back to agriculture, thereby imbedding them in the land values of the section. The procedure should protect individual farms in their year-to-year operations while burdening the value of land with the cost of the risk insurance against the hazards of weather found to be typical of that section.

in supplementing income, specifically of those farm families where inadequate incomes cause them to disinvest soil capital.[38]

Government payments to farm families might well continue to claim substantial budget appropriations because of the large number of farm people, especially in the South and the Plains States, with wholly inadequate incomes[39] to feed, clothe, and house themselves and to educate and move their children to places of better opportunity. The present criteria for distributing government payments to agriculture need to be overhauled. The payments should be shifted, in the main, from a production to a consumption basis, the latter to include capital investments in the human agent. This change will necessitate less emphasis upon farm land and other material resources and more upon farm people; hence less stress on the commercial aspects of farming and more upon measures of social welfare. The diets, shelter, education, and mobility of the large numbers of children which are being reared in farm homes are of vital concern to society. They are our replacement stock of tomorrow. Their health, training, and ability to migrate where they are most needed is vested with a good deal of public interest. It is necessary that government payments be distributed increasingly in such a way that they will reach the particular farm families with inadequate incomes and that they will help rather than hinder socially desirable migration.

There is, however, still another task which government payments will have to perform in the transitional period ahead. In order to establish the procedure that commodity loans and storage are not to be used to affect income allocation, but instead, strictly to facilitate the production and marketing of consumable income, it will be necessary to use some of the present administrative machinery to supplement the income of farmers when commodity loans and prices are too low to earn an adequate income for the farmers affected. In performing this task the notion of parity income has considerable merit.

[38] The grants and aids which AAA is giving for certain farm practices might well be expanded and made an important feature for supplementing the income of farmers with inadequate incomes.

[39] In the wholly objective connotation of that term: inadequate income in terms of social welfare criteria publicly agreed upon, meaning that society through approved governmental policies decides that it is to the interest of all to raise such inadequate incomes to the level dictated by the agreed upon social welfare criteria.