POLICIES TO MEET ACCELERATED GROWTH

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The American farm problem was treated for decades as if it were of temporary nature. The policy means used, except during wartime and regardless of the administration, largely assumed implicitly that temporary measures would "see us through" a few abnormal years, then we could readily return to "equilibrium and normal conditions." But it is now obvious that the problem is not a temporary one.

OUTLOOK FOR U. S. AGRICULTURE

The problem of supply which is large relative to domestic demand will continue through this decade, pushing downward on farm prices and income. At high stages of economic development, food supply tends somewhat automatically to increase more rapidly than food demand, for these reasons:

1. The structure of agriculture shifts more to a capital intensive basis under growth and advanced development. At low stages of growth, the major input is labor; at high stages of growth, the major input is capital. For example, total inputs of U. S. agriculture were composed of approximately 75 percent labor and 25 percent capital in 1910. By 1960, the proportions were nearly reversed, having changed to 70 percent capital, including land, and 30 percent labor.

2. A shift of the largest proportion of inputs to capital is important because it increases incentive to lower the prices of materials or capital resources which substitute for and increase the productivity of labor and land. The nonfarm industries can produce, package, and sell capital inputs to farmers. They not only have a broader base and incentive for producing items or materials which improve the technology of farming, but they have equal incentive for communicating knowledge of new technology to farmers. Private firms now spend more on technical research for agriculture and the communication of knowledge (if all outlays for salesmen, advertising, etc., are included) than the agricultural colleges and the U. S. Department of Agriculture.

3. The nonfarm sector is likely to intensify its effort to develop new technical knowledge for agriculture because the two major variables affecting the profitability in use of (the demand for) capital representing technology are the productivity and the price of the

materials. Hence, emphasis will be on finding technologies, representing capital items to be retailed, which have higher productivities.

4. Research in the agricultural colleges and the USDA will become more effective in promoting supply growth. Two factors lead in this direction. One is the accumulation of scientific knowledge, with its compounding in the unleashing of further knowledge contributing to greater productivity. The other is an enlarged world-wide investment in technical knowledge, which has a high transportability among nations.

5. The increased specialization and commercialization of agriculture will result in more rapid growth in agricultural productivity. Not only are farm people becoming better educated, but also the more alert and able managers have the industry concentrating in their hands.

6. Finally, causes rooted in world political, economic, and humanitarian considerations will force the United States to emphasize a sustained or greater tempo of economic growth. Agriculture cannot escape being caught up in this growth.

While the productivity of agriculture can be expected to increase rapidly during the 1960's and into the following decade, domestic demand for food in aggregate will be restricted to nearly the rate of population growth. The food supply function is thus expected to continue forward at a rate exceeding that of demand. Under this situation, agricultural prices and income can be maintained, in the absence of compensating policy, only as the growth in productivity of new capital resources or technology introduced into agriculture serve to decrease the demand for labor, land, and capital items of conventional forms. Since labor, land, and old capital are of low mobility, these resources will remain in farming at low prices or realized returns. These low prices or returns cause employment to be large and output to be great relative to consumer demand. The result is depressed farm prices and incomes.

Without large increments in foreign demand, this is the underlying or structural prospect for the 1960's. Public policy may be used, of course, to change the underlying structural forces. Even on the basis of currently known technology, production could grow to levels required by a population of 230 million in 1975, while land input could decline by about 28 million acres as compared with 1958-59.[1]

Projections to the international market are more precarious, particularly on the side of demand for U. S. farm products. World economic development and population growth are not likely to press

[1] O. R. Rogers and G. T. Barton, "Our Farm Production Potential, 1975." U. S. Dept. of Agriculture, Agr. Info. Bul. 233.

against world food supply in a manner and magnitude to strain U. S. farm output or cause a general draw of labor resources into agriculture. Two factors will prevent such a situation: (1) Less developed countries will prefer to encourage economic growth and technical development in their own agriculture, rather than to become increasingly dependent on imports from the U. S. (2) More developed countries, aside from the U. S., and conventional surplus countries such as Canada and Australia, are currently in growth stages where farm output is increasing more rapidly than population and demand. For example, in Western Europe, supply may increase as much as 50 percent more rapidly than domestic demand over the next decade.[2]

THE RESOURCE PROBLEM

New capital forms or innovations will continue to substitute for labor and land, causing the absolute demand for labor and the relative demand for land to decline. Some work that I have done on marginal rates of substitution shows that one ton of fertilizer can substitute for 23 acres of land and 60 days of labor. Similar rates of substitution for other innovations, if not for fertilizer, are likely in future decades.

If labor, land for particular uses, and old capital forms were readily transferable out of agriculture, the price and income problems of agriculture would not arise. In this sense, the farm problem is one of factor supply in agriculture. Increase the elasticity of supply of these resources to agriculture over the next decade, and the related farm output, price, and income problems would be diminished. This outcome can be a major goal of policy, and numerous means can be used to attain it over the long run. We use the qualification *long run* since the resources involved typically are highly inflexible in their employment opportunities. Involved are labor resources representing middle-aged or older people whose life experiences are tied to agriculture and who have too few skills to take with them to other industries. Involved, too, is land which cannot be converted from surplus crops to other uses with better demand prospects (such as forestry, recreation, and grazing) without large sacrifice in income and capital investment and a great cost in time for conversion. Also involved are buildings and other fixed capital items which have little or no use value in other industries.

Among the acceptable policy means for resource adjustment are education and guidance of farm youth and their parents, land withdrawal, and even transfer payments and loans for labor resources. But the problem transcends the farm industry and relates equally to

[2] George Allen, "International Policies Relating to Agriculture," Ames, Iowa, July 1960. Ditto.

the nonfarm labor and capital resources which are located in rural communities of regions oriented toward agriculture. The nonfarm resources involved are no less important than those of agriculture, but have been too largely overlooked in farm policy. The result of this oversight has been the rejection of farm policies which might have otherwise met with public acceptance and facilitated a healthier supply and income structure for agriculture. Hence, broader social policy is needed if the more basic problems of agriculture are to be solved over the next decade or more.

PROBLEMS IN POSITIVE-SUM UTILITY OUTCOMES

Earlier in the nation's history, a basic national problem was attaining rapid development of agriculture. Such growth was needed especially to increase per capita income in a nation which had the majority of its resources and consumers in agriculture. The situation was such that technical development in agriculture generally benefited both farm producers and food consumers. The majority of consumers were on the farm and gained accordingly; nonfarm consumers gained in a lower real price of food. In addition, a relative saving of resources occurred and an absolute transfer of labor from agriculture permitted production of more of other goods and services from a given stock of resources. But we are now at a point where rapid technical advance in agriculture can benefit consumers through a declining budget outlay and real price for food, while farm producers in aggregate sacrifice in income level. I consider this to be the essential policy problem of the 1960's: development within agriculture to correspond with national economic growth goals, but with policy which guarantees positive-sum utility outcomes over the two broad groups, farmers and consumers.

Technical progress of agriculture now can make only a small relative contribution through a surplus of income over consumption to provide a capital base for industrialization or transfer of labor force from agriculture to industry. Farming has shrunk to such a small proportion of the nation's economy that the major sources for growth stimuli now lie in other sectors of the economy. The urgency for technical and organizational advance, to facilitate national economic growth, has shifted to fields such as education, industry, and the services. Technical and supply advance which reduced even the 1920 farm labor force of 12.5 million to half by 1960, and allowed addition of this labor to a national labor force of 40 millions had great impact on general economic growth. But advance which frees half of a 1961 labor force of 6 million, and adds it to a 70 million national labor force, has much less impact. Only about 8 percent of the nation's labor force, and about 7 percent of its capital now is employed in agriculture.

Agriculture is no more or no less important than numerous other sectors in resources employed and contribution to national income. But a policy is needed to guarantee that farm producers gain some share of the general economic progress to which they contribute. Some farm producers may gain in income even while the group as a whole sacrifices. Similarly, the nonfarm consumer group located in rural areas with incomes tied directly to prosperity of agriculture may suffer while the nation's consumers gain from greater supply and lower real price of food. Resolution of these gain and loss conflicts is the foremost policy problem of agriculture during the next decade. Political acceptance or rejection of particular policies largely reflects the extent to which these gains and sacrifices are adequately recognized and treated in programs.

Some of the farm population are unwilling to accept rigid quotas or supply controls because such controls would cause them to sacrifice (or gain less) to give others the benefits of progress. Others are unwilling to accept an unrestricted market and its particular distribution of the gains and losses from technical advance and inelastic demand. Therefore, a single policy mold for the nation, as frequently attempted in the past, is unacceptable or unworkable. A national policy consisting of a single program brings differential gains and sacrifices to different regions. Consequently, "side payments" arise in the form of "trades" between regions. This frequently nullifies the program. An example was the acreage control programs without cross-compliance. The "side payments" allowed cotton producers to plant feed grains, wheat farmers to shift land to grain sorghums, and feed grain producers to plant small acreages of wheat.

Conceptually, agricultural policy is formulated partly within a framework of "what I gain, you lose." We have two "persons," the consumer versus the producer; or two "persons" in the form of the farmer who can increase output only by a smaller proportion than net price declines and, therefore, loses versus the farmer who can increase output by a greater proportion and gains from increased output even with lower price. This situation leads to policies which attempt to compensate those who lose; or to check supply so that producers in general gain from greater income while consumers gain from lower real prices for food.[3]

[3] Because of the inelastic demand under economic development which gives rise to the two "persons," agricultural policy can be represented as a two-person zero-sum game. But once public appropriations have been made for eliminating the uncertainty of aggregate utility outcomes under the zero-sum game framework, the political and economic process in public decision making then approaches an n-person positive-sum game. It is n-person in the sense that more than two groups (individuals) are concerned and the strategies to maximize gain by a single group must be changed. It is positive-sum in the sense that a given amount of program funds is to be distributed

Policies which promote economic development and permit consumers and the general economy to gain while a portion of the contribution to progress is retained by farm producers are certainly possible. We outline some possible elements of such programs in a forthcoming book, *Agricultural Policy Under Economic Development*, Chapters 8-16.

The two extreme propositions for economic growth are adjustment of agriculture and the distribution of gains. At one extreme is the proposal to turn prices loose in the market and freely squeeze labor out of the industry. The other extreme proposition is to freeze the farm size and labor structure of the industry, a sort of "Indian reservation" policy, to keep the structure and population as it was in the past, as a national museum of the nation's heritage.

SPECIFIC POLICIES

A reasonable proposition is that the basic and very strong forces of national economic growth will override all policy restraints of agriculture in the next two decades. With a continued increase in the price of labor relative to the price of capital, substitution of capital for labor will continue throughout the economy. Mechanization of farming will be further encouraged for this reason, and the number of farms will decrease still further. Similarly, the high labor rewards in nonfarm industry will pull more people out of agriculture, particularly in those regions where farm earnings are low. Aside from outright prohibition of migration and constraining the production pattern to that of the present, the forces of national economic growth will take us in this direction, and agricultural policy might best be geared to this developing pattern. Further, I doubt that the values of farm people dictate otherwise for the long run. True, this generation of farm operators does not want to bear losses from economic development to give the consuming society the benefits of a lower food budget. Evidently farmers in aggregate, for their own generation, prefer some form of compensation to override the sacrifices or costs that otherwise fall on them as a result of progress. But farm families show no evidence of insisting upon the maintenance of a structure of agriculture which freezes their children in agriculture. The historic evidence points in the opposite direction, with a major increment in the nation's labor force having

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and one group does not "pay out" if it loses, but only fails to receive a portion (or as large a proportion) of the quantity to be distributed. While much of the political struggle may be in this framework of an n-person positive-sum game (with industries and sectors related to agriculture strenuously in the "game" to claim a proportion of the public "payoff"), with various interest groups attempting to maximize gain from a given appropriation and to accomplish program trades toward this end, the more essential task over the next decade is to attain policy which more nearly corrects the possibility of negative-sum utility outcomes which result.

come from farm youth. Farm families prefer that their children have opportunities in nonfarm occupations which promise highest rewards.

Resistance to particular policies stems from expected or actual distribution of gains and losses resulting from them. As mentioned previously, the free market distribution of gains and losses under economic progress has not been acceptable to the general farm public. We have no basis for saying that the gain in utility to the gaining groups is greater than the loss in utility for the sacrificing groups. But exactly the same applies to specific market control policies. For example, a marketing quota system can be put into effect which embodies essentially the same problem of bringing gains to some groups but losses to others.

A land withdrawal scheme which concentrates adjustment in one area gives rise to similar problems. If farmers in one region are paid to withdraw their land from production, they receive compensation to offset any losses they would realize. The smaller output can raise the price and income of farmers in other regions who keep their resources in farm production. Merchants and nonfarm businesses in the latter regions can also gain from the farm income so generated. But nonfarm businesses in the former region sacrifice in income as large segments of land and labor resources are withdrawn from production and families migrate to other locations. We have no basis for assuming that these nonfarm persons are any less important than those in other regions, or that they are any less important than farm people. Needed, then, is broader social policy which gives as much consideration to these sectors of the population as to agriculture, or gives equal consideration to all affected sectors of agriculture.

Such policies are possible. They can be structured so that each individual makes decisions advantageous to himself. Required is policy which allows him choice among alternatives, with compensation geared accordingly. Voluntary supply control or resource withdrawal programs are of this nature where they: (1) provide compensation payments within agriculture, (2) are on a scale to effect supply control and resource transfer in desired magnitude, and (3) provide restraints on rapidity of change which protect the utility position of nonfarm people, or compensate them equally with farm people The individual who is certain that selling his right to produce deprives him of his freedom and forces utility reduction need not participate. In any case a policy combining several programs is needed.