THE ROLE OF STATISTICS IN FORMULATING THE (PROPOSED) FOOD AND AGRICULTURE ACT OF 1962

John A. Schnittker, United States Department of Agriculture

The proposed Food and Agriculture Act of 1962 would authorize supply-management programs for feed grains, wheat, and milk, the commodities for which the most serious surplus problems exist, and would modify or expand certain soil conservation, credit, and rural economic development programs of the Department of Agriculture. It was sent to Congress by the President in late January this year, was generally approved by the Senate, disapproved by the House, and is now in Conference Committee of both Houses, in a much modified form. Both the formulation and the administration of the two kinds of programs pose major statistical problems.

Commodity Programs

1. Feed Grains.

The proposed program for feed grains would authorize the use of marketing quotas and acreage allotments as devices for limiting production and marketings. A national marketing quota for feed grains would be proclaimed each year, equal to the amount needed for livestock feed, human food, seed, industrial uses and exports, less estimated imports and if Government stocks are excessive, less an amount to permit stock reduction.

The national marketing quota would treat the four feed grains -- corn, grain sorghums, oats and barley -- as one commodity. It would be translated into a national acreage allotment on the basis of expected yields. This national acreage allotment would be apportioned to States, counties, and farms on the basis of the average acreage of feed grains produced during the base period.

Each feed grain producer subject to the quota would be required to remove from production an acreage equal to the difference between his farm's base acreage and the acreage allotment for the year. Land diverted from feed grains would be put into conservation uses, and possibly would be used for forage after a few years.

The Secretary would be authorized to make limited payments to producers who divert feed grain land to conservation uses for three years.

Prices of feed grains would be supported at between 65 and 90 percent of the parity price as determined by the Secretary. Price supports would be available only to producers who stay within their acreage allotments and comply with the land use requirements.

Production on excess acreage of feed grains would be subject to marketing penalty at the rate of 65 percent of the parity price per bushel when marketing quotas were in effect.

The marketing quota would be subject to a referendum and would become effective only if approved by two-thirds or more of the producers voting in the referendum. If the marketing quota were disapproved by producers, feed grains would be without price support.

2. Wheat.

The minimum national acreage allotment for wheat which has been 55 million acres since the late 1930's would be eliminated, and would be replaced by an annual allotment based on the year's marketing quota, as determined by the requirements for wheat and the need to reduce wheat stocks held by CCC.

The Secretary would proclaim a national wheat marketing quota each year equal to the year's total needs for wheat for human food, seed, and exports, less estimated imports and so long as CCC stocks are excessive less an amount to allow for stock reduction. This marketing quota would be translated into a national acreage allotment on the basis of expected yields. The national allotment would be apportioned to States and counties on the basis of the average acreage of wheat produced during the past five years.

Each wheat producer would be required to put wheat acreage into conservation uses in proportion to the amount by which the new national acreage allotment is reduced below 55 million acres. Land diverted from wheat would be subject to conditions described above for feed grains. The Secretary could make payments on wheat allotment land diverted to conservation uses for three years and could permit producers to divert additional land from wheat up to 20 percent of the wheat allotment and make payments for such diversion.

As in the case of other marketing quotas, the wheat program would be subject to a referendum of the producers and would become effective only if approved by two-thirds or more of the producers voting in the referendum.

3. Milk.

The proposed program for milk and milk products was designed to achieve progressive improvement in dairy farm income, while reducing Government program costs to a desirable minimum, by introducing two new features into the dairy price support program: (1) A supply-management program with price supports provided at least two-thirds of the producers voting in a referendum approved it; and (2) A limit of $300 million per year on the Government spending to acquire dairy products to be used for domestic welfare and foreign assistance, plus regular expenditures for Special Milk and School Lunch Programs. Marketing fees on over-allotment milk sales would, if marketing quotas were in effect, supplement the price support operation.

This program was designed to require the producers of excess milk to bear directly the cost of acquiring and disposing of dairy products in excess of what could be sold or used effectively in Government programs.

So much for a birds-eye view of the proposed program. It should be obvious that programs such as this require a full kit of statistical tools. Two types of statistical information deserve special emphasis. The first type are the economic and statistical data and relationships that underlie the kind of estimates and projections that are needed to permit informed and intelligent policy decisions. The second type are the statistics required to administer the program itself.

The first group is perhaps more important than the second, since program design can do much to ease later administrative problems. To turn to the feed grain program for the moment, the national marketing quota would require estimates and projections of the total needs for livestock feed, human food, seed, industrial uses and exports for a marketing year beginning about a year after plans for the crop are made. By far the greatest of these uses is livestock feed. The purpose of livestock production is not only to satisfy consumers, but more than incidentally, to produce income for farm people. It follows that projecting the quantities of feed grains needed for livestock feed cannot be done in a price vacuum, but must be done in the context of prices that will return reasonable incomes to farmers and yet will be fair to consumers. This requires projections of complex relationships among the prices and consumption of the various livestock items. Ideally, this would mean a complete model of the demand and supply relationships in the complex feed-livestock segment of our agricultural economy.

A considerable amount of research has been done over the years, particularly on the demand side. Brandow's work reported in Interrelations Among Demands for Farm Products and Implications for Control of Market Supply, Bulletin 680, Pennsylvania State University, is a good illustration of this.

Considerably less useful research results are available on the supply side. This is unfortunate since under present day economic conditions, the supply side of the price-making equation for farm products begins to over-shadow the demand side

Two rather deceptively simple statistical measures are of almost crucial importance in supply-management programs for feed grains. These are (1) yield per acre and (2) grain consumption per animal unit. Different combinations of these two can lead to evaluations that run the gamut from pessimistic to optimistic projections of the probable feed-livestock and price support situation.

There has been a strong upward trend yield of feed grains per acre. The ability to make accurate projections of expected yields is essential to any program which attempts to adjust feed grain production by limiting the number of acres used. Thus, accurate evaluations of the extent and the effects of fertilizer use and of the contribution of several other productive factors to the upward trend in yields in the past and their potential for future boosts in yields are needed.

Rates of feed consumption per animal unit have also shown a strong upward trend in recent years. This has helped to offset the embarrassment that might otherwise have accompanied the results of the sharp increase in yields, but it has not avoided distressing increases in surplus stocks. Here again the ability to measure the influence of the factors contributing to this upward trend and forecast their future course are highly important.

Here are further examples. We export substantial quantities of wheat, and this raises a host of additional questions involving evaluation of foreign statistics, foreign economic policies, and international relations. The fact that the farm production season in a year or more in length in some cases, and that the 1964 wheat acreage allotment, for example, should ideally be announced more than a year before any 1964 wheat will be marketed, and long before the foreign demand prospects can be adequately appraised raises further problems. An unexpected drop in the consumption of milk in 1961 complicates the problems in this field, and the fact that dairy animals produce both milk and meat is always

a potential source of statistical error in milk production or cow numbers.

The administration of supply-management programs requires additional detailed statistical information. A feed grain acreage diversion program requires information on acreage, yield, and production of feed grains on individual farms. Operation of such programs helps to produce statistical information that would not otherwise be available.

The Statistical Reporting Service is moving forward in the development of a program of enumerative surveys which are designed to improve the basic estimates of acreage, yield, and production of crops and numbers and production of livestock. A brief discussion of this program is being given before another session of these meetings.

Resources and People

When we come to the problems of land, water, and people, we have serious gaps in our statistical information and in analyzing such information. Much is known about our land resources in terms of land use, land classes, according to physical attributes,etc. We have to a considerable extent, information about land resources by sizes and types of farms and for broad regions. From the policy standpoint, data on land and its use are relatively adequate for policy formulation; for example, broad conservation policy. Statistics on water resources are probably less adequate. Perhaps in the West, where water has always been a critical resource, we know more about the problem than in any other area. However, in much of the central and eastern portions of the nation, where supplemental irrigation has become so important in the last decade or two, there is a serious lack of information significant for overall policy formulation. Variations among States with regard to water law and water rights makes it more imperative that we obtain a backlog of information on this resource and its use.

It is significant that in recent years that the problems of people in agriculture and rural areas are receiving more attention in policy-making. The statistical information to support realistic basic solutions to this problem have been rather weak, although actions are being taken to remedy this. In the past, statistical information on agriculture has generally dealt with farmers and farming as a whole without too much importance being attached to the dual complex of the agricultural population, one being the highly commercialized sector, and the other the low production and low income sector. The latter includes nearly twice as many people as the former, but it produces only between 10 and 15 percent of the total agricultural output. It is in dealing with the people in agriculture and their potential both in and out of agriculture that there is the greatest need for additional statistical information and particularly for analysis of information.

There has been and continues to be a real effort to identify and classify low income problems, and the characteristics of low income groups among farm and rural people. It is fully recognized that price and commodity programs, and even technical assistance programs built around agricultural production, can and will have little effect on the incomes and well-being of the low income segment of the population. Policy to deal with opportunity and income development is essentially general economic policy. It must have not only a substantial basis in the potentials and possibilities of people, but also in the potentials and possibilities of the national economy to grow, and of communities and areas themselves to participate in that growth.

In considering the income problem, considerable strides have been made in recent years in obtaining and analyzing some of the needed information. For example, incomes of farm, rural-nonfarm and urban families are now available, and intersector and interregional comparisons can be made. Significant measurements are possible which will relate to the economic development potential of populations and of areas to current economic development trends. With some detailed analysis, it will now be possible to measure the magnitude of employment and income opportunities needed for rural people and for significant adjustments that need to be made as between the farm and nonfarm sectors.

One of the most meaningful types of information needed, not only for agriculture, but economic growth and development in general, is a realistic measurement of economic development potential of areas. This is a tremendous job of statistical analysis insofar as agriculture is concerned, relating that sector of the economy to other sectors, analyzing mass data on incomes, occupational change, and input-output relationships. Much of the needed broad data are available for this on a State, regional and national basis, but there is also serious need for this type of information at a regional or area level. Statistical relationships of data, say at the level of 13 Southern States, are quite revealing and significant but they do not reveal much for an 18-county area, say of north-central Georgia. Some area studies which the Department of Agriculture has made helps us in this respect, but in these we have looked at only the resources of the rural open-country area.

In the Department of Agriculture, there has been and must continue to be a recognition that the effectiveness of much agricultural policy will depend upon nonagricultural facets of growth and development. Some examples of significant statistical analysis in process in this area in the Department of Agriculture follow:

1. The Rural Development Branch of the Economic Research Service has a contract for tabulations of unpublished 1960 Census of Population data for counties that will provide detailed information relating family and person characteristics and their incomes and economic activities.

2. A Special Project is underway in cooperation with The Agriculture Division, Bureau of the Census, in which the 1960 Sample Census of Agriculture questionnaires (and their 1959 counterparts) are matched with the 1960 Census of Population questionnaires for the farm households. The analysis of these data will permit the association of human and physical resource characteristics and utilization in agriculture for types and sizes of farms.

3. Work is underway to develop the data necessary for delineation of viable economic development areas that will encompass counties with concentrations of low income rural people.

4. Data for counties depicting the relationships over time of farm and non-farm family incomes are being developed and analyzed.

5. Data are being developed and refined that will permit the determination of the proportions of non-farm family and person and incomes which are required in order for farm people of comparable income earning capacity to be comparably rewarded.