A Basic Need--Relevant and Reliable Statistics

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GENERAL NEED FOR STATISTICS IN PLANNING AND DECISION MAKING IN GOVERNMENT

Government administrators, policy leaders, and legislators must have facts for decision making in meeting the challenges concerned with growing and marketing raw food and fiber. They need to be able to measure progress toward regional and national goals. Important questions such as determination of export marketing quotas and price incentives for encouraging domestic production must be answered and require forecasts and estimates of agricultural production.

Likewise farmers and the other businessmen who handle the products they buy and sell need agricultural statistics if they are expected to comprehend and accept government policies. But they need the data even more to make intelligent decisions consistent with efficiency of production and marketing.

Let us recognize that besides the evident need for relevant statistics in planning and decision making there is also the need for accuracy in the statistics. There is a saying that a man's judgment is no better than his facts. Top level planning and policy making, based on unreliable statistics, is very likely to produce undesirable consequences.

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DEFINITION OF AGRICULTURAL STATISTICS

Let us now closely examine the term "agricultural statistics." In this effort, I refer to a paper written by Glenn D. Simpson, Deputy Administrator of SRS, and presented at the CENTO Symposium on Agricultural Statistics, Ankara, Turkey. Mr. Simpson pointed out that we can recognize two broad categories of agricultural statistics as represented by (a) the periodic censuses of agriculture, and (b) the programs identified as current agricultural statistics in which year-to-year or other time interval changes in a nation's agriculture are measured. Periodic censuses provide an inventory of a nation's agricultural resources at reasonably fixed points in time. Censuses are fundamental in establishing important "benchmarks" on such items as the number of acres devoted to various crops; tree numbers by type, age and variety; and livestock and poultry populations classified according to sex and age. Censuses provide the basis from which to measure future progress and are, therefore, basic to the successful operation of a nation's agricultural business.

The second category -- a program of current agricultural statistics -- provides forecasts, estimates, or values of percent change in inventories as the means to measure change from year to year or for shorter time intervals. This program provides the basis on which all users of agricultural statistics make their current decisions. The methods used to produce the statistics for the program of current statistics differ from the census-type programs. A census, theoretically, is a complete enumeration of all the items being counted in a nation and, therefore, subject only to errors in recording and summarizing the data. The current statistics program is based on data

collected from samples of respondents and is subject to sampling and estimation errors in the statistics produced.

Mr. Simpson stated further in his paper, "If we can accept the hypothesis that agricultural statistics are needed for decision-making purposes by all levels of the economy from the farmer to the highest level of political leadership, we may be able to attempt a definition. What are the decisions that need to be made? The farmer must have some notion about the type and quantity of commodities he should attempt to produce and the expected income from them. This is particularly important as the agriculture of a nation moves toward modernization. The marketing system must have a decision-making capability on the location, quantities, and condition of commodities it will endeavor to route through the trade 'pipelines' both internally and internationally. The political and management policymakers must be able to make meaningful decisions with respect to the use of the nation's agricultural resources. For example, in a developed nation a decision whether to produce more or less wheat must be made, as well as a decision by a milling company on the inventory purchase of the same commodity. In a developing country decisions whether inputs of machines and fertilizer for wheat should be increased to achieve higher production at the expense of an alternative use of the land may have to be made. In both the developed and developing countries the decisions, if they are to be valid, must be supported by reasonably accurate and current statistics on the present state of wheat production.

"National decisions regarding supplies of food, feed, and fiber are no less important than those involving such areas as minerals, waterways, airspace, or even the military. Therefore, a working definition of agricultural statistics for the purposes of this discussion might take the following form:

"A system of numerical measurements based on periodic census counts and current sampling procedures designed to improve the efficiency of agricultural resource use for the nation, to improve the marketing system, and to improve the general welfare of both the farm and nonfarm populations in terms of the supply and quality of food and the level of farm income."

CHARACTERISTICS NEEDED FOR ESTABLISHING A STATISTICAL SYSTEM

We have now explored a working definition of agricultural statistics in terms of the methods used to produce them and their general uses. Recognizing the importance of having current statistics with a high degree of accuracy, one might well ask at this point what can be done to establish or improve existing systems for providing agricultural statistics. What are the resources required to operate such a system? How are they to be organized?

A broad range of questions, in addition to these, can be asked to which there are no easy answers. And there is no one answer which will fit the different cultures, geographies, and agricultures of many countries. We think that after 100 years of experience with developing a statistical system in the United States, that several characteristics have been identified which should be carefully considered if a suitable climate is to be established in a country.

These characteristics include:

a. Public Service. Recognition that the degrees of coverage, distribution, and objectivity needed for this statistical intelligence can

best be achieved as a public service suggests the placing of responsibility for statistics in appropriate departments of Government depending on subject matter.

b. A Schedule of Statistical Reports. The specific details about what is to be measured and the timing of measurements should be clearly identified and publicized. The statistical system must then be organized and operated to achieve these statistical measures on a recurring basis on a fixed time schedule.

c. Preparation of Reports and Publications. Failure to immediately publish results of surveys whatever they may be seriously erodes public confidence in a statistical system. Such attitudes, once established extensively with the public, are nearly impossible to overcome. They will destroy any system in a relatively short time.

d. Availability of Data and Reports. Regardless of the methods of public communication available, statistical reports based on public trust should be released to all communications media at the same time. A major effort must be made to communicate results to farmers as well as other civilian users. Only in this manner will the public become convinced that the statistical data are assembled for the use of all interested persons. True, many individuals--especially some of those politically oriented and many commodity speculators--may not be pleased with the results, but all will have access to the data at the same time.

e. Timeliness. The value of agricultural statistics, particularly those designed to measure changes on a current basis, is highly

perishable. Nothing is more tenuous or frustrating for an administrator, businessman, or farmer than to be required to make decisions today based on data that had relevance a month, a year, or longer in the past. Certainly, a minister of agriculture needs an estimate of acreage planted to wheat before the crop is harvested if he is to make reasonably valid decisions regarding price, utilization, or foreign trade requirements.

f. Confidentiality. The Statistical Reporting Service of the United States puts the highest possible value on maintaining the confidentiality of its data sources. Under no circumstances do we reveal names of respondents, or the data they report, to anyone inside or outside the Government. This includes tax officials, the Secretary of Agriculture, Members of Congress, or any other interested party. All employees are subject to 10 years in prison or $10,000 fine if any of us reveal any data for any unauthorized purpose. We are also subject to 5 years' imprisonment if we issue false information. Another paper could be prepared on the measures we take to guard the confidence of our data sources. Similar measures may be neither possible nor totally desirable in a lesser developed country, but some recognized level of confidentiality appears to be an important ingredient of a successful system. It aids greatly in the establishment of faith in statistics by the user groups.

g. Professionalism. The business of operating a successful statistical system is a professional endeavor of high order. Statisticians

who operate the system must be thoroughly trained in the technical field of statistics; they carry the responsibility of a great public trust; they must be insulated from outside political pressures and influences from any source; they must be well paid if the required quality of manpower is to be attracted and retained. Finally, they must be dedicated to the public service.

h. Centralized Control. It is necessary to achieve standardization of methods and procedures throughout a statistical system covering political or organizational subunits. Centralized control is imperative to obtain unified direction and coordination.

RESOURCES REQUIRED FOR A PROGRAM OF CURRENT AGRICULTURAL STATISTICS

The probability sample surveys used in producing statistics on a current basis are costly and must be conducted very carefully so that small samples will suffice. Everywhere in the world today there is expanding need for reliable statistical information and for reporting about shorter time intervals.

In order to meet these expanding data needs it becomes necessary to pool resources from all interested institutions and data users to avoid overlapping and duplication of resources. Priorities must be established for identifiable statistical needs.

Data users must recognize the need ror setting these priorities and organizing resources as the program becomes established. It is very difficult to assess how much is required in the way of resources, but it is safe to say that they will be limited. Attention must be directed, therefore,

towards use of existing resources to accomplish the goals and programs identified as most important to a particular country.

It is most difficult to recommend, from this vantage point, a particular plan or approach that will prove workable in establishing a program for providing a system of continuous agricultural estimates. Several Latin American countries recently have requested assistance and counseling from the Statistical Reporting Service, United States Department of Agriculture, in developing their agricultural estimating programs. This assistance has been provided by teams of skilled statisticians who have worked with their counterparts in the Governments of Columbia and Panama. The team visits are financed through the Agency for International Development and vary in length from one to four weeks. So far, the results of their efforts have been very productive and rewarding to all participants. We hope this type of activity can be continued and expanded. We in the Statistical Reporting Service always stand ready to work with other countries in the world to improve agricultural statistics.