# REVISIONS OF STATISTICAL DEFINITIONS: WHAT IS A FARM?

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The entity called a farm is central to our food and fiber data system. It is the central concept around which three-quarters of our food and fiber statistics are designed and collected. (2) Thus, the concept behind the statistic called "number of farms" and related derivatives such as the "net farm income per farm" are very important in developing a statisitical view of U.S. food and fiber production. Farm policies to adjust supplies of agricultural commodities and enhance or stabilize incomed earned from farming are significantly influenced by the statistical measures based on this concept.

In his recent book Social Information Processing and Statistical Systems -- Change and Reform, Edgar S. Dunn points out that there is a strong tendency to objectify the world; i.e. to conceive of it in terms of concrete objects. (3) One result of this is that we tend to treat entities as if they had "skin" in spite of the fact that an entity is an abstraction. This has proven to be the case in the attempt to change the definition of what is called a farm for the 1974 census of agriculture. We will describe some of this experience in trying to revise the statistical definition and attempt to state some broader implications for renewal of data systems.

Dunn also develops a taxonomy of names for entities. The first element he calls "identifiers." They are used to identify single entities, such as an individual farm. Secondly, the states and activities that characterize the entitities, he calls "descripters." The efforts for 1974 were to change both the identifiers and descripters of the entity called a farm.

The definition of a farm in use has been a place with sales of $250 or more of agricultural products or any place of 10 acres or more with sales of $50 or more. The proposed new definition is any establishment from which $1,000 or more of agricultural products is sold or would normally be sold. Thus, two aspects of the identifier are modified. One is to increase the minimum value of sales to be called a farm. The second is to change from the concept "place" to "establishment."

The changes in descripters are additions to the set of descripters used to classify data on farms. Additions are made to the number of classes of value of sales from the establishment. Another change implements the use of the more detailed type of product descripters contained in the four digit levels of the 1972 Standard Industrial Classification Manual. (4) Finally, a new major group of descripters is introduced that will provide the framework for separating farms into: (a) those farms which keep the operator primarily employed in farming (b) farms where the operator is only employed for a minority part of his work time, and (c) farms that are operated as a minority part of multi-establishment companies that have integrated or diversified into farming.

The definition of what is called a farm and related descripters have been changed a number of times since farms were first counted in the Agricultural Census of 1850 (table I).

Past changes, as well as the efforts for 1974 were made at the time of a Census of Agriculture which is taken each five years. The Secretary of Commerce has the authority to determine who will be included for each Census. The Department of Agriculture has generally worked closely with the Department of Commerce and made recommendations for change in census definition because they use the same identifier for reporting of other statistics about farms. A point should also be made that other program agencies of USDA and other government agencies such as the Internal Revenue Service and Social Security use program and reporting requirements that result in different definitions and thus different counts of the number of "farms."

The recommendations by the Department of Agriculture in 1973, in preparation for the 1974 census, were made after careful assessment of potential impact from the change. Consultation had been held with a number of advisory, Congressional, farm organizations, and professional groups. Several alternative changes were presented to these groups and their reactions to the alternatives were used in shaping the final recommendations.

The USDA wanted to make the change so that resulting statistics on farming would more nearly reflect the farming industry that existed today. A USDA spokesman at a Congressional hearing said the need was for "truth in Labeling" and development of statistics that were more meaningful for making public policy decisions. (5,7)

The USDA spokesman went on to explain that the increase of minimum sales level to $1,000 would mean that approximately 18 percent of old definition farms would be dropped from the statistics. Only about three-tenths of one percent of all farm products were sold from these units. These large number of very small farms were said to distort the commonly used measures for assessing the economic well being of farms, i.e. net income per farm. And these distorted statistics then, in turn, provide misleading information when decisions are made for farm price and income policies.

The USDA testimony stated that operators of these very small farms receive most of their family income from other sources (table II). They receive only very small benefits from farm price and income programs because of the small size of their farming activity, but they are not necessarily low income families. The people involved in these very small farming operations have needs just as do other nonfarm residents of rural America. These include jobs, quality education, health care and personal safety. But these needs are identified by statistics on the rural farm and rural

TABLE 1.-- Farm definitions used in Censuses of Agriculture

| Year | Acreage limitations | Other criteria |
|---|---|---|
| 1850<br>1860 | None | $100 worth of agricultural products produced for home use or sale |
| 1870<br>1880<br>1890 | 3 or more acres -<br>less than 3 acres - | Any agricultural operations<br>$500 worth of agricultural products sold |
| 1900 | None | Agricultural operations requiring continuous services of at least one person |
| 1910<br>1920 | 3 or more acres -<br>less than 3 acres | Any agricultural operations<br>$250 worth of agricultural products produced for home use or sale; or constant services of at least one person |
| 1925<br>1930<br>1935<br>1940 | 3 or more acres -<br>less than 3 acres - | Any agricultural operations<br>$250 worth of agricultural products produced for home use or sale |
| 1945 | 3 or more acres -<br><br>less than 3 acres - | Agricultural operations consisting of 3 or more acres of cropland or pastureland; or $150 worth of agricultural products produced for home use or sale<br>$250 worth of agricultural products produced for home use or sale |
| 1950<br>1954 | 3 or more acres -<br>less than 3 acres | $150 worth of agricultural products produced for home use or sale<br>$150 worth of agricultural products produced for sale |
| 1959<br>1964<br>1969 | 10 or more acres -<br>less than 10 acres - | $50 worth of agricultural products produced for sale<br>$250 worth of agricultural products produced for sale |
| *1974 (proposed) | None | $1,000 or more worth of agricultural products produced for sale |

TABLE 2.-- Off-farm income as a percent of realized net farm income, 1960-1974

| Year | All Farms | Farms with less than $2,500 sales |
|---|---|---|
| | Percent | |
| 1960 | 76 | 339 |
| 1961 | 80 | 360 |
| 1962 | 88 | 404 |
| 1963 | 98 | 463 |
| 1964 | 104 | 480 |
| 1965 | 108 | 525 |
| 1966 | 99 | 570 |
| 1967 | 125 | 651 |
| 1968 | 129 | 702 |
| 1969 | 119 | 762 |
| 1970 | 126 | 832 |
| 1971 | 146 | 975 |
| 1972 | 118 | 993 |
| 1973 | 80 | 1,298 |
| 1974 | 94 | 1,584 |

nonfarm people, not by statistics on the farming operation.

The change from "place" to "establishment" would lead to more information about large scale farming since it would allow the data to be more compatible with the classification used in other economic industries. This change in identifier and the addition of a descripter category of "farms that are operated as a minority part of multi-establishment companies" should improve the ability of the farm data system to reflect the reality of large scale farming.

The addition of more value of sales classes was also to allow the data for the larger farms to be tabulated into more detail. And the use of the type of product descripters in the 1972 SIC manual would provide more detailed tabulations than ever before.

The reduction in number of farms from the changes, approximately 18 percent for the U.S., would vary considerably by state. Some states would lose as little as 3-4 percent while others would lose around 40 percent of what are now counted as farms. The size of farm population, defined as people with residence on a farm, would decrease by the same approximate percentage.

The only potential direct impacts on program funding is the distribution among states of Federal funds for agriculture research, extension and rural development. The total amount of funds available for distribution would not decrease nor would any state lose any of its current share of funds. Only future additional appropriations would be distributed differently with those states having relatively large percentages of farms with less than $1,000 of sales receiving less of these increased funds than they would get if the identifier were not changed. The net effect was very small since the untouched base or current funds are large relative to probable increases in money, at least in the next few years.

The Department of Commerce adopted the new definition after several discussions with their Advisory Committee on Agriculture Statistics. This committee consists of members of the major farm organizations and many farm related industries. The Department of Commerce adopted the recommendation for the following reasons: it would more nearly meet the needs of the principal data users as represented on their advisory committee; it would mean substantial increased completeness of coverage in their mail-out mail-back Census of Agriculture program; and it would mean some reduction in cost for the Census of Agriculture.

Joint press releases were made in August of 1975 by both Departments to announce the change. It was after this announcement that the first major and organized opposition to the change appeared. This opposition came from a few members of Congress who represented states that had relatively larger percentages of small farms, from groups that represented a rural fundamentalism or "farming as a way of life" point of view, and from groups concerned about the rural development policies of the Federal government.

This opposition asked for and obtained Congressional hearings held in November of 1975. Their primary stated concerns about the change centered on the people who would no longer be counted in the statistics on farming. They thought these people might be harmed by no longer being eligible for some programs of USDA, that these people were being "written off" by USDA and Census, that there would be a loss of valuable statistics about these people, and that these people would be harmed by any redistribution among states of Federal funds for agriculture research, extension and rural development. They stated that small family farmers were the backbone of America and that they were afraid the change in definition would add to welfare rolls and urban ills. Illustrative of much of the concern was the statement by one witness that "the absence of a particular group of people from the statistics is synonymous with the denial of the existence of that group and its problems." (6)

The Department of Agriculture and Census Bureau also testified at these hearings and stated again the reasons for making the change. These spokesmen denied any loss of eligibility for government programs or any other potential harm for the people who would be excluded from the economic industry statistics on the farming sector.

A few months later the Congress passed and the President signed a bill which included an amendment to prohibit the change in farm definition before June 30, 1976. This prevented the Census Bureau from using the new definition in their preliminary releases of 1974 data. Further Congressional hearings were held in April and June 1976 at which time testimony was received from a larger number of groups with similar arguments.

Throughout the controversy there has been no opposition to changing the identifer from the concept of place to one of establishment. And the introduction of more descripters has been commended by many of those who oppose change in the minimum sales identifier. Some have stated that more descripters was the only proper way to provide more useful statistics and the identifier should be as all-inclusive as possible.

The current status of all this effort is that a final resolution has not been reached. Those who favor the change and those who oppose it have continued to have discussions.

## Lessons From The Experience

What are the lessons that have been learned from five years of study and effort to bring a change in statistical identifiers and descripters into being? First and foremost is that making such a change is a difficult task. The entity called a farm has a "skin" and not cutting into the skin has a very high value to some people. Those people have been part of the "who is affected" group as suggested in the title of this session of the ASA meetings or others representing their

interest.

Much of the disagreement has centered on who really is affected and in what way. The Department of Agriculture has said the affected group would be the larger farmers who benefit from existing commercial farm price and income programs. But the lack of opposition from that group or their farm organization representatives leaves open the question of whether they feel they are an affected group. The group who feels they will be affected are the small farmers that would be dropped from the industry statistics and it is their representatives who have opposed the change.

Our observation is that it is not enough to assess who will be impacted by the change and how, but that other groups who think they might be affected also need to be considered. More time could have been given to anticipating what opposition would come forward and what their concerns would be. More of these concerns could have been defused ahead of their being voiced. Realization that change would be so difficult could have resulted in more staff work on proposals to make them more acceptable. More articulate presentation of a wider range of facts and figures could have been constructed. This might have included a special sample survey to find out more about the small farm operators being dropped from the statistics and specific plans to improve other sources of data on these people and their needs for public policies.

Our second observation is that those who get into discussions on an issue like this are not knowlegeable about who benefits from different types of public programs, about what data are used to guide various public policy decisions and about what data are available for this purpose.

The implication is that a good job of providing statistical measures that identify and describe what is really happening in the real world has not occurred. Renewal of data systems has been given too little attention and the misconceptions left by out-of-date systems are difficult to overcome. This is a validation of the concerns on obsolete data systems that were discussed by a committee of the Agricultural Economics profession. (1)

In the discussions on this issue many believed that small farming operations meant low income families and the way to help them was to leave them in the statistics on the farming sector and provide them farm price and income programs. Others were unfamiliar with Population Census data on rural farm and rural nonfarm people, thus pleaded for retaining all possible sources of data. Still others were not aware that the rural nonfarm population, which the operators of small farming operations would become part of as they were dropped from the farm population, was already the largest part of the rural population and several times larger than the farm population. Another commonly held misconception is that the farm population is all the people engaged in farming and only includes those people.

A third observation is that it is easier to get agreement on changes in descripters than changes in identifiers. This raises the question of whether more data system renewal can be accomplished through changes in descripters and lessen the importance of the identifiers. Can statistical information be presented in ways that will cause the public to use data on sub-groups more effectively? Ray Hurley, long the head of the Census Bureau's Agricultural Division, stated in 1962 that none of the descripters or classification systems tried since 1940 had eliminated the misuse of "average farm figures" based on a number that included "more than a million 'not really' farms." This is consistent with Dunn's taxonomy which gives identifiers more importance than descripters. But have we really tried to make sub-categories of data more relevant and useful for policy decisions? Is there a need to stress sub-categories of data to policy makers?

Other questions come out of these recent efforts to change the identifier and descripters for farms. One is whether there should be attempts to create statistical descripters that might make value-laden terms more objective over time. One example in agriculture is the term "family farm." The concept has never been carefully defined or statistically measured against a generally accepted definition but is one of the more powerful terms in debates on farming policy. Another question is whether more constant attention to renewal of data systems and more frequent attempts to make needed changes would help to make change easier. Would more frequent change cause change to be viewed as a more responsible part of the mission for those who maintain the data system? Would more frequent change help bring about the development of more objective criteria to use in deciding when the data system needs renewal? Can such criteria be developed? Or would more frequent change cause too many problems in comparison of statistics over time?

We believe the ultimate lesson from this experience is that renewal of data systems, through continual examination of concepts, identifiers, descripters, and data flows, is a very high priority task in our rapidly changing world. We must have renewed and vigorous commitment to development and maintenance of data systems that meet the needs of the public and private decisionmaker. Trying to cut into the "skin" and make substantive changes in data systems that are badly out of date is a difficult task. It is a task which grows no easier with a lack of attention and concern.

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