

## DISCUSSION

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This discussion of papers from the session on "Research and Methodology for the 1982 Census of Agriculture" was requested to represent that of a researcher or planner who uses the Agricultural Census. Overall, these papers are impressive. They show both the methodical concern and diligence by bureau professionals in their efforts to provide high quality agricultural data. Since these papers are interrelated, some comments made about one of them may easily apply to several of the others.

The first, on "Record Linkage for the 1982 Census of Agriculture Mail List Development Using Multiple Sources," provides such examples. The mailing list of farms from which the census is based is basic to a representative census. The more complete the mail list, the less there is which must be approximated by estimation techniques or caught by other controls, if at all. Since the major component of the mail list is those farms responding in the last census, the completeness of each mail list has repercussions for future censuses so far as ongoing farms are concerned. Therefore, an investment of resources for procedures and techniques to develop any mail list will have both immediate and long-range payoffs. The mail list edit program described in this paper appears to be one good example of such an investment.

It is noted in the first paper and in the second one, "Coverage Evaluation for the 1982 Census of Agriculture," that special emphasis is placed on obtaining data from farms expected to produce over \$100,000 in sales each year and which consequently produce the abundance of agricultural market goods. In addition to receiving letters and questionnaires, nonrespondents from such farms are telephoned to elicit the information. This improves the accuracy of the census regarding the significant production units. This is quite desirable. However, this naturally tends to bias the totals against smaller economic sized farms. One result of such a practice over recent censuses is to perhaps inflate, to some degree, the data underlying structural trends toward fewer and larger farms. Still, there can be little doubt in the overall validity in this trend since it has been in effect much longer than these particular procedures for covering large farm nonrespondents.

Whether greater attention to large farms has contributed another, more recent type of structural trend is not so clear. This is the tendency towards the "disappearing middle" where there are fewer and fewer farms in the middle of the farm-size distribution. Such a potential bias against adequate counts of mid-sized farms is further hinted in response rate data in the paper on, "Evaluation of the Effectiveness of Data Collection Procedures for the 1982 Census of Agriculture," which reports that farms grossing \$10,000-\$99,999 had response rates of at least four percent less than the adjacent smaller or larger sales groups.

In any event, the preliminary coverage evaluation finds that, overall, 91 percent of the nation's farms were included in the mail

list. Among them, 99.5 percent of the farms selling \$2,500 or more were covered whereas only 71.5 percent of those selling less were included in the census. In such ways, the findings of the coverage evaluation underscore the need for supplementary area sampling at the state level and the need for better small farm coverage. Such sampling and coverage would help assure that the numerous operators of smaller farms would be as well represented as large farm operators. While it is pleasing to have highly accurate counts of the large farms, additional attention to smaller farms would enhance the evenness of the data and the overall representativeness of farm activity from state to state.

The third paper on data collection effectiveness also reports an 84 percent return from those farms on the mail lists. This percentage is in response to an initial mailout plus as many as six follow-ups to those who did not respond from late December 1982 through late June 1983. Experiments examined region, questionnaire length, and follow-ups by letter only versus letter and questionnaire during early follow-up mailings. These experiments generally found that the procedures used in the Agricultural Census were more effective than those alternatives checked. This is reassuring. Nevertheless, further experimentation is encouraged. Experimentation is the most systematic research design for eliminating much of the guesswork about how to increase response rates. One new experiment would be to include census questionnaires with each follow-up beyond the first reminder card. This might be ineffective. However, a farmer who receives a follow-up letter without a questionnaire may no longer have the original questionnaire and could become jaded to further data collection attempts.

Through these kinds of experiments, response rates and quality of the data should improve while costs and time needed for follow-ups may be minimized. And, such data collection experiments could provide useful scientific and statistical information for other survey researchers as a by-product of the improved census data itself.

The fourth paper, "Computer Assisted Telephone Interviewing During the 1982 Census of Agriculture," describes yet another innovation that has been adopted by the census. Preliminary results suggest that computer assisted interviewing yields better response rates with less clerical time than did standard telephone follow-ups. Shortcomings in computer training time and supervisory time should not be taken too cautiously since this was a novel effort. Such drawbacks may decrease as experience is gained.

The final paper on, "Comparability of Data from the Censuses of Agriculture," serves to remind us that one purpose of the Census of Agriculture is to establish trends in addition to the cross-section descriptions. This presents a dilemma: the greater the quality of a cross-sectional census at one point of time, the lower the quality of trend data. Why? Improved farm definitions, mailing lists, census intervals, data collection procedures, and response categories introduce

inconsistencies with results from earlier less-advanced censuses. As the paper states, "Such comparisons are valid in measuring real change when equivalent procedures are used." This paper goes a step beyond the normal census results in order to establish a refined estimate of the number of farms in the U.S.

The Census and its Agricultural Division are to be commended, again, for their efforts to try to at least approximate data quality that was sacrificed by budget cuts at critical times during recent years. It is quite unfortunate that funds were not provided to the Bureau that would have enabled it to perform timely and needed activities such as the state-level area sampling conducted in 1978. Excellent data on agricultural production and on those people with the skills to provide food and fiber are of vital importance to the social well-being of the nation and its social institutions. Sound policy and scientific data require appropriate funding levels from the federal budgeting process.

Still, there are new needs for data. The first of these may require extra budgeting; the other two should require little additional effort. One need is for better small farm data. What happens on small farm operations in small places is of significance to many households for consumption as well as extra income in local areas. With better coverage of smaller farms, other types of research and planning opportunities to assist

smaller operations may be realized. At least there would be more data to serve as a basis for further scientific research.

A second need is for a public-use sample of farm units. Presently, the Census aggregates individual farms into county unit statistics. County aggregates are, of course, different from individual farms. Scientists are now reaching saturation levels on what can be learned from county data alone. Moreover, they cannot independently afford to obtain farm-unit data comparable to that which now exists unreported in the Agricultural Census. To repeat such efforts is costly and ineffective. The time has come to fulfill this major data need. Public-use sampling is already done elsewhere by the Bureau.

A third need is for panel data on farm units. Little is known about the rate of entry and exit from farming and the explanation for such rates in different regions and states. Analyses which could show survival or failure of farms from one census period to the next--along with characteristics associated with farm success or failure--are of great scientific and policy importance. Understanding these changes seems especially critical at this social and economic juncture for farmers, communities, and national needs.

It is hoped that future sessions of papers will report these developments in the availability of Census of Agriculture data.