

Marketing Statistical Services: The NASS Experience

Frederic A. Vogel¹

Abstract: Governmental statistical agencies that conduct sample surveys have unique capabilities that can be used to provide statistical services for others. This paper will describe how the National Agricultural Statistics Service (NASS), U.S. Department of

Agriculture, uses its statistical system to do surveys on a reimbursable basis for other organizations. Some examples of how surveys are conducted for others will be described followed by a discussion of issues to be resolved when providing such services.

1. Introduction

The NASS has a Federal mandate to produce current statistics about U.S. agriculture. Large scale multiple frame surveys are conducted on a quarterly, semiannual, and annual timetable to provide the required statistics. To carry out this program, NASS has an infrastructure and capabilities conducive to providing statistical services.

- NASS has two sampling frames – which are sampled to provide state and national estimates (Fecso, Tortora, and Vogel 1986). The area frame is the entire land mass of the U.S. which has been stratified by land use and type of agriculture. A national rotating sample of 16,000 land segments from this frame is surveyed annually. NASS also maintains a list sampling frame. This list frame accounts for a large portion of the nation's farms, especially those large, and with measures of type and size allows for cost efficient sam-

pling and other survey methodologies. The combined use of the two frames in a multiple frame sampling context offers a rich variety of alternative sampling designs.

- NASS has a headquarters staff skilled in sample survey design, estimating procedures, and computer processing. In addition, a work force skilled in data collection and analysis is distributed across 45 state offices. Each state office is equipped with a Local Area Network also connected to a main frame computer managed by the headquarters unit. All state offices have capabilities to do computer assisted telephone interviewing. Finally, 3,000 part-time interviewers trained in data collection procedures are available.

This infrastructure provides capabilities for special surveys at a fraction of the cost another entity would incur because of the one-time startup costs.

2. Purpose

The philosophy of NASS providing statistical services for other organizations has its

¹ Director, Estimates Division, National Agricultural Statistics Service, U.S. Department of Agriculture, Washington, D.C. 20250-2000 U.S.A.

roots in the Federal/state cooperative system in place since 1917. Prior to 1917, State Boards of Agriculture or other state agencies were establishing their own statistical systems. During this time, the U.S. Department of Agriculture was also establishing offices across the country to produce statistics about agriculture.

As separate state and Federal statistical systems developed, two problems occurred. One was the duplication of effort in having two separate offices maintaining lists of correspondents and conducting simultaneous surveys. More serious, however, was that the separate state and Federal reports often did not agree which caused confusion among those the statistics were meant to serve.

As a result, state and Federal agencies sought a way to combine resources. The result was the initiation of formal cooperative agreements between the Federal and state agencies to eliminate two separate and entirely distinct reporting systems by creating a single unit to avoid inaccuracies or conflicting estimates. Through these agreements state and Federal resources are pooled. The offices operate under federally mandated standards and procedures. State resources generally support larger scale surveys to provide state and sub-state estimates from the Federal surveys.

This spirit of cooperation between the state and Federal Governments has grown today where NASS provides statistical services for other Federal agencies, state entities, colleges and universities, and private organizations. These services are most often in the form of reimbursable surveys where the receiving organization reimburses NASS for conducting the survey.

3. Services Provided

NASS attempts to provide statistical services at a low cost that minimizes respon-

dent burden, yet meets statistical standards. Common procedures used to meet requests for special data and information follow and show how on-going surveys can be used.

- Questions are added to surveys being done as part of the regular NASS program. For example, NASS conducts semiannual surveys of cattle inventories. Questions to determine grazing fees paid have been added to the questionnaire to provide information other Federal agencies use to administer public land. In addition, the January 1992 livestock survey contained questions about animals lost to predators.
- Sample sizes are increased. This is commonly used when sample sizes for national surveys are not large enough to provide state or county estimates. Many state entities provide funding to NASS to increase sample sizes to provide statistically reliable state or sub-state level estimates.
- On-going surveys are subsampled for a reinterview to obtain more specific information. For example, NASS conducts quarterly surveys to measure hogs and pigs inventories. Respondents to this survey are subsampled to obtain in-depth data on incidence of swine diseases. The initial survey is essentially a screening device.
- Independent samples are selected and special surveys are conducted for the requesting organization. If none of the above procedures fit, independent samples can be selected from the area and/or list frames and surveyed. Because of the existing infrastructure – such surveys can be often mounted quickly and final results provided shortly thereafter.
- Statistical consulting is provided. Nonstatistical organizations often handle large amounts of administrative data and can be assisted by statisticians to analyze their

own data. It is NASS policy to provide such services without charge unless more than 40 staff hours are required.

When a governmental statistical organization adopts a policy of providing statistical services it also results in overall lower costs of providing such services and a level of quality that could be difficult to match.

- Other organizations avoid the fixed overhead cost of developing and maintaining sampling frames. NASS on the other hand, can use resources from the reimbursable surveys to improve the quality of the area and list sampling frames.
- Other organizations avoid the costs of hiring and training part-time interviewers. This can be extremely cost prohibitive – especially for a one-time survey. The NASS corps of interviewers, on the other hand, continue to gain additional knowledge and experience from the special surveys.
- When surveys are conducted for other Federal agencies, NASS can assure that statistical standards are adhered to and individual reporting unit confidentiality protected.
- NASS has access to other survey and administrative data that can be used to measure the quality and accuracy of data from reimbursable surveys.

4. Issues

A statistics agency in the U.S. operates under an umbrella of legislation that not only provides resources but fixes essential requirements about confidentiality and ethics. The following paragraphs summarize some general policies and standards applied when surveys are conducted and statistical services are provided. These will be followed by other policy issues involving survey design, data collection, and data analysis.

- Basic statistical standards directed by the

Office of Management and Budget (1978) as well as standards internal to NASS as described by Tortora and Vogel (1987) are adhered to when conducting surveys for others.

- The supplemental data to be collected should provide an overall benefit to agriculture and be justified in terms of information needs, hypotheses to be tested or problems to be solved. Opinion type surveys are generally avoided because the results could be politically sensitive and erode the NASS reputation for providing uncontroversial statistics.
- Formal cooperative agreements and memoranda of understanding between NASS and the sponsoring organization should be in place. These agreements should describe duties and responsibilities of each party and costs to be shared by each.

Whenever NASS conducts a survey to provide information for others, whether by conducting a separate survey or by adding questions to an on-going survey, several survey design policies are considered. Adherence to these standards are sometimes difficult for a potential customer to accept.

- The sampling frame(s) should account for at least 80% of the target population. When totals for the population are to be estimated, frame coverage should be closer to 95%.
- Sample sizes should be large enough for relative sampling errors to be less than 20%.
- Response rates should be at least 70%.
- Excessive respondent burden is avoided. The NASS goal is to keep the maximum average length of interview below one hour.
- Efforts are made to avoid surveys that would greatly increase the reporting burden for a group of respondents already

appearing in many NASS sponsored surveys. In these cases, the first attempt is to incorporate data needs into one or more of the on-going surveys.

- When questions are added to a questionnaire for an on-going survey, special care is taken to minimize the effect on the operational survey program. The innocuous addition of a simple question may adversely change the data reported in the other questions. Such problems have been documented for a considerable time such as by Vogel (1974) and must be carefully monitored.
- When independent surveys are conducted for other organizations, the survey questionnaire must still obtain information that NASS can use to update the sampling frame. For example, the questionnaire should contain screening questions to verify the operation is involved in agriculture, and if not, the new operator's name. Basic information about size and type of operation used for future sampling purposes should also be obtained.

Other issues involve confidentiality of survey respondents, ownership of the survey data and published results and data handling procedures.

- NASS does not conduct surveys for proprietary purposes. The sponsoring organization is required to make the survey results available to the public. In many instances, NASS will publish the results of the survey.
- NASS reserves the right to review the sponsor's report before it is published to ensure survey methodology is properly documented, proper inferences were made, and that there were no breaches of confidentiality.
- Even though surveys may be conducted for others, all confidentiality require-

ments remain in place. Individual reporting unit data are turned over to the sponsoring organization only with the consent of the respondents. Otherwise, only summary level or published results already reviewed for potential confidentiality problems are what the sponsor receives.

5. Summary

It is NASS policy that it should provide statistical services for the agricultural community. This policy ensures a more efficient use of public funds and minimizes overall respondent burden. Resources earned by NASS are reinvested in its sampling frames which leads to overall sampling efficiencies. As NASS does more special surveys, its skill levels in sampling methodologies and data collection have improved, again enhancing the operational program. A Federal statistical organization should use its resources to provide statistical services for others. Care should be taken to follow standards of statistical practice and to minimize costs.

6. References

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