

Supporting Statement – Part B

AGRICULTURAL SURVEYS PROGRAM

OMB No. 0535-0213

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

- 1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved during the last collection.**

The June Area Survey is an area frame probability-designed survey. The population of interest is all land in the United States. Identifiable land units called segments are visited by enumerators to determine planted crop acreages; inventories of hogs, cattle and sheep; plus other agricultural items of interest. Land in each State has been stratified by type of land use. The area within a land use stratum is divided into substrata based on geographic similarities. Within each substratum, segments are randomly selected and assigned to one of five replications. Rotation of segments within a land use stratum is achieved by replacing one or more complete replications: each year 20 percent of the segments are replaced with new ones. Segments falling in predominately cultivated areas are about one-half to two square miles in size while those in residential and urban areas are about one tenth to one-quarter square mile. Segments in open range and woodland areas vary in size from 1 to 100 square miles.

The Agricultural Surveys list frame respondent universe is the two million farms in the United States. However, only those farms which meet certain minimum size criteria are eligible for sampling. A design called multivariate probability proportional to size (MPPS) is used to select the list sample. MPPS sampling uses multiple measures of size such as a farm's soybean and corn acreage, to determine the probability of selection. Sub-populations of row crops, small grains, and specialty farms are created; operations may be in one, many, or all sub-populations. From each of these sub-populations samples are drawn independently, to be used alone or in any combination, based on what is needed in a particular survey quarter. Additionally, the

samples are drawn so they have maximum overlap and so that records with more items of interest are more likely to be chosen, which maximizes coverage of our target population while reducing the number of contacts needed. The sample is replicated and different combinations of samples and replicates are used in different quarters, providing some continuity from quarter to quarter, while reducing burden.

Ag Surveys 2013 - OMB 0535-0213

| Survey | Survey Month | Sample Size | Freq. | Total Contacts | Total Responses | Response Rates | Coverage Rates |
|--|--------------|-------------|-------|----------------|-----------------|----------------|----------------|
| Area Frame | | | | | | | |
| Agricultural Tracts <u>3/</u> | June | 37,159 | 1 | 37,159 | 28,835 | 77.6% | 74.0% |
| Non-agricultural Tracts | | 42,908 | 1 | 42,908 | 42,908 | 100.0% | N/A |
| Area Quality Control | | 331 | 1 | 331 | 331 | 100.0% | N/A |
| Area Questionnaire Testing <u>1/</u> | NA | NA | NA | NA | NA | NA | N/A |
| List Frame | | | | | | | |
| Ag Yield | May | 12,840 | 1 | 12,840 | 10,345 | 80.6% | 77.4% |
| | Jun | 5,262 | 1 | 5,262 | 4,055 | 77.1% | 83.2% |
| | Jul | 8,156 | 1 | 8,156 | 6,182 | 75.8% | 80.0% |
| | Aug | 24,153 | 1 | 24,153 | 17,933 | 74.2% | 80.8% |
| | Sep | 11,396 | 1 | 11,396 | 8,991 | 78.9% | 76.8% |
| | Oct 5/ | 12,753 | 1 | 12,753 | 7,003 | 54.9% | 55.2% |
| | Nov | 9,924 | 1 | 9,924 | 7,398 | 74.5% | 74.8% |
| Cattle Inventory | Jan | 37,066 | 1 | 37,066 | 25,515 | 68.8% | 76.4% |
| | Jul 4/ | 0 | 1 | 0 | 0 | - | N/A |
| Cattle on Feed (Iowa Only - monthly average) <u>1/</u> (<1,000 hd/oper. In IA) | All | 1,973 | 12 | 23,676 | 9,631 | 40.7% | N/A |
| Cattle on Feed (Iowa Only - monthly average) <u>1/</u> (>1,000 hd/operation) | All | 203 | 12 | 2,436 | 2,278 | 93.6% | 65.9% |
| Cattle on Feed <u>1/</u> (>1,000 hd/operation - US) | Jan | 1,637 | 1 | 1,637 | 1,285 | 78.5% | 85.1% |
| | Feb | 1,513 | 1 | 1,513 | 1,149 | 75.9% | 84.5% |
| | Mar | 1,565 | 1 | 1,565 | 1,184 | 75.7% | 84.3% |
| | Apr | 1,375 | 1 | 1,375 | 991 | 72.1% | 83.9% |
| | May | 1,358 | 1 | 1,358 | 920 | 67.8% | 82.9% |
| | Jun | 1,322 | 1 | 1,322 | 972 | 73.5% | 84.9% |
| | Jul | 1,311 | 1 | 1,311 | 969 | 73.9% | 85.2% |
| | Aug | 1,286 | 1 | 1,286 | 900 | 70.0% | 84.1% |
| | Sep | 1,277 | 1 | 1,277 | 917 | 71.8% | 83.9% |
| | Oct | 1,244 | 1 | 1,244 | 858 | 69.0% | 82.6% |
| | Nov | 1,279 | 1 | 1,279 | 884 | 69.1% | 83.3% |
| | Dec | 1,285 | 1 | 1,285 | 915 | 71.2% | 83.9% |
| Crop Acreage and Grain Stocks (Quarterly Agricultural Surveys) | Mar | 77,244 | 1 | 77,244 | 51,753 | 67.0% | 62.8% |
| | Jun | 68,323 | 1 | 68,323 | 40,640 | 59.5% | 54.3% |
| | Sep | 61,618 | 1 | 61,618 | 42,446 | 68.9% | 66.0% |
| | Dec | 75,573 | 1 | 75,573 | 46,099 | 61.0% | 57.2% |
| Crop and Livestock Loss Survey (New) <u>2/</u> | NA | NA | NA | NA | NA | NA | N/A |
| Hog Inventory | Mar | 5,699 | 1 | 5,699 | 3,810 | 66.9% | 88.4% |
| | Jun | 5,551 | 1 | 5,551 | 3,558 | 64.1% | 85.4% |
| | Sep | 5,381 | 1 | 5,381 | 3,527 | 65.5% | 83.7% |
| | Dec | 7,910 | 1 | 7,910 | 5,091 | 64.4% | 83.5% |
| Land Values | Jan | 2,150 | 1 | 2,150 | 1,373 | 63.9% | N/A |
| Rice Stocks (on farm) | Aug | 182 | 1 | 182 | 148 | 81.3% | N/A |
| Sheep and Goat Survey | Jan | 19,382 | 1 | 19,382 | 13,618 | 70.3% | 69.5% |
| | Jul 4/ | 0 | 1 | 0 | 0 | - | N/A |
| List Quality Control | Jun | 507 | 1 | 507 | 507 | 100.0% | N/A |
| List Questionnaire Testing <u>1/</u> | NA | NA | NA | NA | NA | NA | N/A |

1/ The Area and List questionnaire testing was not conducted in 2013. Burden request remains in place for potential need for testing in the future.

2/ The loss survey was created to allow for potential disasters that may need to be accounted for to accommodate natural disasters (flooding, disasters, freezes, etc.) or late harvests that could impact current estimates. It was not conducted in 2013.

3/ Agricultural Tracts: includes allowance for nominal pre-screening when indicated.

4/ July Cattle and Sheep surveys were not conducted in 2013 due to budget cuts.

2. **Describe the procedures for the collection of information including:**
- **statistical methodology for stratification and sample selection,**
 - **estimation procedure,**
 - **degree of accuracy needed for the purpose described in the justification,**
 - **unusual problems requiring specialized sampling procedures**

Data for the June Area Survey is obtained by personal contact. Refusals must be accounted for by visual observation or based on similar type operations where data was collected. The Area Screening form is used to screen for farm operators living inside the segment or having any land inside the segment; the Area Version questionnaire is used to record data for agricultural tract operators. The reporting unit for crop acreage is the number of acres located inside the segment. Acreage within a segment is expanded to the State level using the sampling probability assigned to each segment: this is called the "closed segment" expansion. Estimates of livestock inventories and number of farms use the "weighted farm" approach in which each farm is weighted by the ratio of acres inside the segment to the total acres of the entire farm, both inside and outside the segment.

Quality control for the area agricultural survey consists of two parts: (1) review of two segments during the data collection period by the supervisory enumerator for each enumerator under his or her supervision and (2) telephone calls made to at least one additional randomly selected tract operator from each enumerator's assignment list. Telephone contacts are made by either a statistician from the Regional Field Office, Data Collection Center, or a supervisory enumerator.

Information for the quarterly agricultural acreage surveys (list frame) is collected via mail, internet, telephone interview, and face-to-face interview. The mix of data collection modes is determined by the Regional Offices according to resources available. Over half of the information is obtained by telephone. Data collection begins on or around the first of the survey month. Reference dates for livestock inventories and grain stocks are the first of the survey month; crop acreage and production are collected for the current crop year. Mail and telephone non-contacts are followed up with face-to-face enumeration. The entire sample is accounted for. As a rule, large operations and operations requiring special handling (previous survey refusals and inaccessibles, complex operations, etc.) are contacted for a face-to-face interview only.

Agricultural yield surveys are based on subsamples of the March and June agricultural acreage surveys and are conducted monthly during the growing season May through November. These surveys provide increased accuracy while reducing sample sizes and burdens associated with previous surveys to collect these data. Data collection for the Agricultural Yield Surveys, centers

around the first of the month, starting about 3 days prior to the date to which the report relates.

The January cattle inventory survey is a multiple frame sample selected in all States except Alaska. It is designed to estimate and publish inventories at the State and U.S. levels. The July cattle inventory survey is a list frame sample selected in all States except Alaska and Hawaii. The July sample is smaller and is used to estimate regional and U.S. inventory only.

The cattle on feed survey program is a monthly census of all known cattle feeding operations with a capacity of 1,000 head or more. It is conducted in 16 States which account for 99 percent of the U.S. cattle on feed inventory in 1,000+ feedlots. Monthly estimates of inventory, placements, marketings, and other disappearance of cattle in 1,000+ feedlots are published for the 11 largest States, for "Other States," and for the U.S.

The quarterly hog survey program for March, June, and September is a list frame sample selected in 30 States for State and U.S. level inventory numbers. In December all States except Alaska are surveyed using a multiple frame sample.

The land values and cash rents survey is a multiple frame survey. It comes from the June Agricultural Survey (area) and a supplemental list sample survey is conducted in 10 States for agricultural land values and all States except for Alaska for cash rents (0535-0002). State and U.S. level values are published.

The January sheep and goat sample is designed to estimate and publish inventories at the State and U.S. levels. The July sample is smaller and is used to estimate regional and U.S. inventories for sheep only.

The Rice Stocks survey is conducted in August for six States with on-farm rice stocks. There is a mail, internet, and interview version of the questionnaire.

All sampling methodology is designed so that the resulting survey estimates will meet our agency precision targets. These precision targets are survey specific and set at the state and regional level; depending on what level our estimates are published. Coefficients of variation on the Agricultural Surveys for major items are 2 to 5 percent at the national level. This level of accuracy is sufficient to provide reliable estimates while minimizing sample sizes and costs. The targets are revised every 5 years and sample allocations are adjusted annually if we observe a state consistently missing a precision target.

For survey quality control NASS uses telephone interview monitoring and a telephone quality control worksheet. The telephone check is conducted twice a year for each enumerator to ensure the original contact provided reliable data and that the enumerators are collecting the data accurately and in a professional manner. The quality control forms are not conducted on the internet due to the nature of these surveys.

3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

All surveys conducted by NASS have very thorough data collection plans and processes. For many of our larger surveys, NASS has a well planned marketing strategy to help publicize the survey in hopes of increasing response. NASS will send informational postcards, provide data fact sheets, or include letters from industry groups that explain the benefits of the survey and illustrate the importance each operation's response is to the overall project.

Nonresponse follow-up is a critical component of our data collection plans. Nonresponse follow-up includes additional mailings of the questionnaire, telephone contacts, and personal visits to the operator. The exact methods used vary by survey depending on the modes of data collection available for that particular survey. Also, in some surveys, NASS identifies a strata of "extreme operators." This term refers to operations within a state that are considered large enough to be highly influential to the state estimates for the survey they are sampled. NASS will often special handle these respondents and collect data through personal visits or have a data collection plan already coordinated with the operator to help ensure a successful interview. This helps guarantee a sufficient level of coverage of the item of interest.

Even with these efforts to collect and account for as much data as possible, nonresponse still exists and needs further attention when data is analyzed and summarized. NASS utilizes various methods for automated nonresponse adjustments that often include imputation routines and/or weight adjustments. The completed reports that we receive that are in-scope for the item of interest will be used in either approach. Every effort is made to form homogenous groupings of respondents so that similar operations are used to represent other similar operations to ensure the most accurate results as possible.

NASS will be incorporating more publicity materials in future years with each survey. Operators who are selected for each survey will be encouraged to complete the surveys using the internet at their convenience. Hopefully, this will result in an increased response rate and reduced data collection costs.

NASS constantly reviews data and procedures to identify sources of error and make adjustments to improve the accuracy and reliability of information collected. One example is the likely undercount of farms derived from the June Area Survey. The following describes a) the undercount issue; b) the source of the error as it is currently understood; c) recommendations made; d) changes that will be implemented for the JAS to be fielded this year.

a) Undercount Issue.

The largest undercount is for the number of farms. As measured in the 2012 Census 12.3 percent of the total adjustment is from under coverage, while only 3.4 percent of the Land in Farms adjustment is from under coverage. The JAS is critical in the measurement of the coverage for the Census of Agriculture and for several other agriculture surveys. Major research efforts have been conducted by the Research and Development Division during the past four years to understand and model the undercount, misclassification and non-response. As a result of the research, new methodologies to adjust farm counts based on a Capture-Recapture methodology have been implemented for the Census of Agriculture. The methodology encompasses four sources of error, non-response, imputation, misclassification and coverage. The work is now being extended into the estimation process for the annual number of farms publications.

One of the primary purposes of the June Area Survey is to provide the first estimates of the area planted for crops. The official estimates are derived from the multiple frame survey and the JAS acreage indications based on land inside the segment boundaries. Non-response for the land inside the segments for the JAS is handled through observation by the enumerators. All segments are enumerated by personnel interview. When a tract operator refuses or is inaccessible, field enumerators are instructed to estimate the acreage information in Section D of the questionnaire. Enumerators are trained to identify different crops at different stages of development. At the time of data collection most row crops are already emerging and are easily identified and recorded at the field level for non-respondents.

b) Source of the error as it is currently understood.

The JAS uses a ratio of the area in the tract to the total area of the farm to prorate the farm level collected data. For estimated tracts this quality is currently being studied. Data has been collected to the source of the farm acreage item estimated on the questionnaire. Research on this topic will

begin soon now that the Census of Agriculture adjustments have been implemented.

c) Recommendations made

NASS wants to further study how estimated reports are completed. This work would be facilitated by having the fields digitally delineated to compare with the Cropland Data Layer. NASS has developed a prototype data collection tool to collect the field boundaries. Once this tool is in use, the research on improving the manually estimated data can effectively be done.

d) Changes that will be implemented for the JAS to be fielded this year

After the 2007 Census, a Farm Number Research Project was conducted that focused on identifying why the farm number indications from the June Area Survey were low. A key findings from the project indicated that our field enumerators were not following the instructions consistently across all states in the screening of tract operators. As a result Agricultural tracts were being coded up as Non-Ag Tracts. Several national training schools were held to re-iterate the June Area Frame methodology and the proper procedures needed to be followed for screening area segments to identify tract operators. In the training of both office staff and the enumerators we have stressed the importance of doing additional probing of the respondents during the interview to make sure we do not misclassify the respondent. As a result of the training the number of agricultural tracts has increased over the last several years which in turn led to an increase in the number of farms direct expansions.

4. Describe any tests of procedures or methods to be undertaken.

Quality control for the area agricultural survey consists of two parts: (1) review of two segments during the data collection period by the supervisory enumerator for each enumerator under his or her supervision and (2) telephone calls made to at least one additional randomly selected tract operator from each enumerator's assignment. Telephone contacts are made by either a statistician from the Regional Field Office, Data Collection Center, or a supervisory enumerator.

The telephone quality control worksheet is also used to test methods for the list surveys. The telephone check is conducted twice each year for each enumerator collecting Agricultural Surveys data. The purpose of this is to ensure the original contact provided reliable data and that the enumerators are collecting the data accurately and in a professional manner.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit,

contractor(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Specifications and survey design were developed by Summary, Estimation, and Disclosure Branch, Methodology Division; Branch Chief is Jeff Bailey (202)720-4008.

The sampling plan was developed by the Sampling and Frame Development Section of the Sampling, Editing, and Imputation Methodology Branch, Methodology Division; Section Head is Eric Porter, (202)720-5269.

Data collection is carried out by NASS Field Offices; Field Operation's Director is Kevin Barnes (202) 720-8220.

The NASS survey administrators in Headquarters for the Agricultural Surveys are in the Commodity Surveys Section of the Survey Administration Branch, Census and Survey Division; Acting Branch Chief is Shiela Corley, (202)720-5921. The survey administrators are responsible for coordination of sampling, questionnaires, data collection, training, Interviewer's Manuals, Survey Administration Manuals, data processing, and other Regional Office support.

The NASS commodity statisticians in Headquarters for the Agricultural Surveys are in the Crops Branch and Livestock Branch of Statistics Division; Branch Chiefs are Lance Honig (crops) (202)720-2127, and Dan Kerestes (livestock) (202)720-6146. Commodity statisticians are responsible for the Estimation Manuals, national and regional summaries, analysis, presentation to the Agricultural Statistics Board for final estimates, and publication.

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