Supporting Statement – Part B

Tenure, Ownership, and Transition of Agricultural Land (TOTAL)

OMB No. 0535-0240

The TOTAL Survey consists of two components: (1) a survey with a target population of agricultural operators, and (2) a survey with a target population of owners of agricultural land who are not also agricultural operators. The first component will be conducted similar to the Agricultural Resource Management Survey, Phase 3 (ARMS III). The list for the second component will be created from a sample of June Area Segments.

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 Tenure, Ownership and Transition of Agricultural Land (TOTAL) survey, like its predecessor (AELOS in 2000), will collect data from both farm operators and farm landlords. The two surveys will draw their samples from two different universes. Both samples will be designed to publish state level data for the 25 core states. The remaining 23 States that will be included in the survey will have their data combined in the all other States category, so that US level estimates can be published.

The 25 core estimate States are: Alabama, Arkansas, California, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas, Washington, and Wisconsin.

Farm Operator Respondent Universe: The potential respondent universe for the TOTAL survey's operator version, is all active farms on the NASS List Frame in the 48 contiguous States, excluding out of scope farms (institutional; experimental, or research farms; and Indian Reservations). The approximately 2 million farm operators are classified based on total value of sales.

Landlord Only Respondent Universe: The potential respondent universe for the landlord only questionnaire will be derived from the Area Frame segments that

are used during our June Area Survey (OMB # 0535-0213). We will merge the land segment information with land ownership data from the Farm Services Agency (FSA) along with property tax information purchased from CoreLogic (a privately owned company). After the removal of any duplication with the NASS List Frame (farm operators) we will have our target universe for the Landlord only version of the survey.

Response Rates: This is a reinstatement of a previously approved survey. Both the operator and landlord questionnaires will be conducted under the mandatory authority of the Census of Agriculture Act of 1997 (Pub. L. No. 105-113, 7 U.S.C. 2204(g) as amended). With the use of phone and field enumerators to conduct non-response follow-up interviews, we will strive for at least an 80% response rate. AELOS response rates in 2000 were 74.9% for farm operators and 50.8% for land owners. Because TOTAL will be contacting each of these respondent populations separately (rather than asking operators to identify land owners who do not operate farms, which associated with a lower than desirable response rate), we anticipate a higher response rate (and lower nonresponse bias) for TOTAL rather than AELOS.

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**

A stratified sample will be selected using simple random sampling for the ARMS Phase I (0535-0218 screening questionnaire). From the completed ARMS Phase I sample, the TOTAL operator sample will be drawn. The stratified sample will be representative of the farm operator population.

The first stage in sampling for the Landlord Only Survey will involve the area segments selected for NASS's 2014 June Area Survey (OMB No. 0535-0213), and the area segments rotated out for NASS's 2013 and 2012 June Area Surveys. These segments were selected using NASS's area sampling frame, which consists of all land, stratified by land use. The primary sampling units (PSUs), based on land area, provide complete coverage of all agriculture activity occurring on that land. The combination of using the 2014 segments and the rotated out segments from 2013 and 2012 provides approximately 15,500 segments, representing all States, except Alaska and Hawaii (which are excluded from the survey).

Administrative data from the USDA's Farm Service Agency (FSA) and commercial data from CoreLogic will be used to identify land owners within the selected segments. In the case of FSA data, FSA's geospatial Common Land Units (CLUs) will be overlaid on NASS's segments using Geographic

Information System (GIS) software. Information from FSA's Farm Records database will be used to identify owner information for overlapping FSA Farm and Tract Numbers. A similar procedure will be used for CoreLogic data: CoreLogic parcels will be geospatially overlaid with NASS segments and land owner information will be obtained from CoreLogic for the overlapping land areas. These two sources of land owner data will provide good (but incomplete) coverage of the land owners represented by the sampled June Area segments. To address coverage incompleteness, segments with no or low FSA/CoreLogic coverage will be identified and given to NASS Field Enumerators. Field Enumerators will use available data sources such as visiting tax assessor records, plat books, etc. to identify additional land owners. The net result will be three datasets of land owners: (1) those from FSA, (2) those from CoreLogic, and (3) those collected by NASS Field Enumerators.

The segments with no or low FSA/Core Logic coverage, in general have little or no traditional cropping acreage, since the land did not have an FSA landlord. Most of the land in these segments that are rated for agriculture will fall into pasture or wooded grassland areas. NASDA Field Enumerators were able to obtain the names and addresses of 1,542 additional landlords who owned land in these segments. NASS feels that the additional landlords identified by the NASDA enumerators in these low impact farm segments provides ample coverage of the population of landlords that own land in these segments.

Probabilistic record linkage will then be used to both combine the three land owner datasets and to remove the names of known agricultural operators. The net result will be a list of land owners who are not agricultural operators (i.e., "landlord only"). A probability sample of 40,000 – 45,000 will be drawn from this list.

Estimates will be generated from data collected on the questionnaire multiplied by a final weight. The final weight will include the selection weight of the sampled June Area segments, the ratio of rented land in the segment over total land rented and a non-response adjustment.

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.**

Non-response is taken into account in both versions (operator and landlord) of the TOTAL sample allocations by State. NASS will provide respondents with multiple forms (internet, paper forms, telephone interview or face to face interview) in which they can complete the surveys.

The NASS Public Affairs Section (PAS) promotes NASS survey efforts and educates respondents about the need and use for the data they are asked to provide. This group has developed survey-specific materials enumerating the benefits and uses of the data gathered from the economic surveys. PAS works with data users and industry leaders to provide concrete examples of instances where the data that respondents provide are used to service the respondents. They are also actively publicizing survey activities by generating and distributing news reports and drop-in articles for industry publications and news outlets.

Unit non-response in the TOTAL farm operator weights is adjusted by using calibration. The calibration process modifies the survey weights so that certain targets are met. NASS uses official estimates of farm numbers, corn, soybean, wheat, cotton, fruit and vegetable acres as well as cattle, milk production, hogs, broilers, eggs and turkeys as calibration targets.

Unit non-response in the TOTAL landlord only weights is adjusted by using the ratio of the June Area stratum estimate (within a state) of the landlord only land acres over the TOTAL expanded landlord only rented acres.

Item non-response for the TOTAL surveys is dealt with by using machine imputation. Data collectors do not impute item values in the field. About 300 survey variables that are critical to NASS analysis and/or ERS work are imputed using usable data from current survey respondents. A multivariate imputation scheme is used and covariates come from several different components of the questionnaire including but not limited to: region, economic sales class, type of farm, acreage and production expenses. Imputed item values are flagged for data users, and the algorithms for imputation are described in technical documents that will be available to data users.

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

NASS uses an OMB-approved generic clearance docket (OMB Control # 0535-0248), to conduct testing and evaluation of NASS questionnaires. A variety of testing methods, including cognitive testing, focus groups, split sample field tests, etc., are used to test ARMS and other NASS surveys.

Data from the TOTAL survey will be evaluated to see if any changes can be made to future ARMS III surveys to lessen the burden on large or complex farm operations.

Web-based data collection is available to respondents for both the operator and landlord versions of the TOTAL survey. NASS utilized Morae usability testing software to test computer based instruments. Implementation and testing of computer-assisted personal interviewing (CAPI) began in fall 2009 with the assignment of a CAPI project manager.

NASS has incorporated the lessons learned from the testing that was conducted based on recommendations of the National Academies of Sciences, Committee on National Statistics (NAS-CNSTAT) comprehensive review of the ARMS 0535-0218) surveys. Copies of the November 2007 report are available via the web at: http://books.nap.edu/openbook.php?record_id=11990&page=R1.

The ARMS Progress Report lists tests NASS plans to conduct from 2012 through 2016. http://www.nass.usda.gov/Surveys/ARMS_Progress_Report.pdf.

NASS has experience from previous economic surveys that have been beneficial in designing the surveys explained in this docket.   In 2014, NASS conducted cognitive interviews with eleven non-operating land owners in the Washington DC metro area in order to understand how respondents comprehend the items in the questionnaire and verify that inquiries worked as intended. Due to difficulties gaining cooperation during the recruitment phase, seven of the eleven interviews were conducted with USDA employees during their regularly scheduled workday. All seven USDA employees were eligible respondents based on the criteria of the target population.

The most useful information obtained during the interviews led to the revisions of the screening questions in Section 1. By clearly defining the eligibility criteria for this survey, respondents will now be able to accurately screen themselves during this primarily self-administered questionnaire. Another important finding included the acknowledgement that items were found to overlap between the sections covering the respondent's expenses. Through the cognitive interviews, we gathered the information necessary to separate all items into mutually exclusive sections on Capital Expenses and Operating Expenses.

Grammatical and minor formatting changes were also made to improve the sequential flow and cosmetic appearance of the questionnaire. Clarifications were added to the questionnaire to aid the respondent's understanding during administration. Generally, there were no substantial issues with the layout or content of the questionnaire found during testing.

Information that we gained in our cognitive interviews will help us to target any training that is needed for our enumerators when approaching this group of respondents. Response improvement techniques will continue to be researched and tested by NASS to improve response rates in the area of questionnaire improvement, respondent relationship building, and soft refusal conversion techniques.

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.**

The sample size for each State is determined by the Sampling, Editing, and Imputation Methodology Branch, Methodology Division; Branch Chief is Mark Apodaca, (202) 720-5805.

Data collection is carried out by NASS State and Regional Field Offices; Kevin Barnes, Field Operations Director (202)720-8220.

The NASS Headquarters statisticians who are responsible for coordination of sampling, questionnaires, data collection, and other Field Office support are Adam Cline (202) 690-8802 (landlord version) and Erik Gerlach (202)720-3598 (operator version). The Census Planning Branch Chief is Christina Messer, (202) 690-8747; Section Head is Donald Buysse (202) 690-8818.

The NASS commodity statisticians in Headquarters listed below are responsible for national summaries, analysis, and publication. Branch Chief is Troy Joshua, (202) 720-6146, and Section Head is Tony Dorn (202) 690-3223.

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