Supporting Statement

FARM AND RANCH IRRIGATION SURVEY

OMB No. 0535-0234

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 potential respondent universe for this survey is the number farms identified in the 2007 Census of Agriculture as having irrigated land, projected to be 272,000 operations. Exclusions will be abnormal farms (institutional, experimental, and research farms). However, Indian Reservations are considered abnormals and will be included. The total sample size for the survey will be approximately 35,000 operations (25,000 for FRIS and 10,000 for Horticulture Irrigation Survey), or thirteen percent of the universe. The target response rate is set at 80 percent or higher.

A stratified systematic sample design will be implemented. The sample will be large enough to provide reliable estimates for each of the 50 States as well as for each of the 18 Water Resource Areas and at the U.S. level. The 50 State list frames will be sampled separately. Each stratum will include one substratum to be sampled with certainty (probability one); it will be composed of farms meeting or exceeding a specified number of irrigated acres, which varies by stratum. A proportional allocation scheme will be used to allocate the remaining sample to the other substrata. A systematic random sample will be selected by substratum within each stratum resulting in different sampling intervals across substrata. The sample is designed to provide reliable estimates for total irrigated acres with an average coefficient of variation of 5 percent for each of the 50 States, and an average coefficient of variation less than 5 percent for each of the 20 Water Resources Areas and at the U.S. level.

Estimates for the survey will be computed by weighting the data for each respondent by an expansion factor equal to the initial sampling interval adjusted for whole farm nonresponse.

Within each geographical strata, farms will be identified as either certainty or non-certainty cases. We expect a combined certainty sample of approximately 2,000 operations and a non-certainty sample of approximately 33,000. The certainty cases will be defined as operations with irrigated acres meeting or exceeding a specified maximum number which varies by State. The non-certainty cases will be sampled independently, by substratum within each stratum.

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.**

Extensive efforts will be used to maximize response to both versions (Farm and Ranch Irrigation Survey and the Horticulture Irrigation Survey) of the survey, and thus reduce the extent of nonresponse adjustment to the survey. Approximately 35,000 forms will be mailed in January 2009. All questionnaires will be keyed from image at NPC in Jeffersonville, IN, but Optical Character Recognition (OCR) data capture will not be used. The initial mailings will contain the questionnaire, a cover letter, an Industry Testimonial letter, a Fact Sheet, and an Electronic Data Reporting (EDR) instruction sheet. For non-respondents, the follow up mailing will contain another copy of the questionnaire and a cover letter. There will be phone follow up for those who do not respond to the mail requests.

When responses cannot be obtained from certainty farms, data will be imputed using data from the 2007 census report form and information from similar farms which responded to the 2008 Farm and Ranch Irrigation Survey. To correct for nonresponse among farms in the non-certainty strata, nonresponse adjustment factors will be calculated independently within each substratum and applied to the expansion factor of each respondent.

In the interest of providing better subject-matter coverage, 2008 FRIS is including additional breakout data within the report form that were not part of the 2003 survey.

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.

Extensive efforts are used to maximize response and thus reduce the extent of nonresponse imputation in the census. A public information campaign will again be used for the 2008 FRIS. The objective is to make farmers aware of the survey, its importance to them and the Nation, and to encourage their response. This campaign will work through farm organizations, radio broadcasters, farm press, agribusinesses, and the State offices operated by NASS.

Overall response rate for the 2003 FRIS was 79.3 percent. To ensure a high response rate and to reduce the nonresponse bias in the final 2008 FRIS estimates, NASS will attempt to collect data from nonrespondents by telephone. Some large farm nonrespondents will be attempted by personal enumeration. The telephone and personal enumeration activities will begin in mid-February 2009, and continue for 2 weeks.

The sample is designed to provide reliable estimates for total irrigated acres with an average coefficient of variation of 5 percent for each of the 50 States, and an average coefficient of variation less than 5 percent for each of the 20 Water Resources Areas and at the U.S. level.

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

The overall procedure and methods to be used for the 2008 FRIS are relatively unchanged from past surveys; the only testing that will be conducted will involve the Horticulture Irrigation Survey questionnaire. The questions are basically the same as used on the original FRIS survey. We are just testing to be sure that this somewhat unique industry will be able to complete the same questions as those asked of typical crop farmers.

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.

NASS is conducting the 2008 FRIS through its Census and Survey Division; the Census Planning Branch Chief is Chris Messer, (202)690-8747.

Specifications, sample design, and survey design were developed by Chadd Crouse, (202)720-3289. They were reviewed by NASS Methods Branch, Statistics Division; Branch Chief is Dave Aune, (202)720-4008.

Data collection is carried out by NASS State Statistical Offices; Deputy Administrator for Field Operations is Marshall Datzler, (202)720-8220.

The NASS survey statistician in Headquarters for this survey is Stacy Wills, (202)690-8767 in the Census and Survey Division. She is responsible for coordination of sampling, questionnaires, data collection, data processing, and Field Office support.

The NASS commodity statistician in Headquarters is Michael Jacobsen, (202)720-9085 in the Crops Branch, Statistics Division. He is responsible for regional and national summaries and publication.

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