

1 Supporting Statement

**AGRICULTURAL LABOR SURVEY**

OMB No. 0535-0109

**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 Agricultural Labor Survey makes use of two sampling frames: a list frame and an area frame. The combined sampling frame comprises all active operations on NASS's list frame with at least \$1,000 in Farm Value of Sales (FVS), as well as all non-overlapping (NOL) records with at least \$1,000 in FVS from the area frame segments in the June Agricultural Survey (OMB No. 0535-0213).

The Agricultural Labor Survey is administered biannually (in April and October) in all States except Alaska and California. (The California Employment Development Division, in cooperation with NASS's Pacific Regional Field Office, conducts a monthly survey in California) Survey data are used to derive national and regional estimates for numbers of agricultural workers and wage rates.

A new Agricultural Labor Survey questionnaire version was created to improve the accuracy of farm worker categorization by labor type and to collect base, incentive, and overtime wages. A bridge study was conducted during the April 2018 Labor Survey and will be done again in October 2018 to evaluate the new questionnaire version.

Response rates for the last two biannual surveys are shown in the table below.

2017 Response Rates				
Survey	Sample Size	Waves of Data Collection	Total Responses	Response Rate
April Labor	11,626	1	6,307	54.2%
October Labor	11,713	1	6,443	55.0%
Average	11,670		6,375	54.6%

The Agricultural Labor Survey List Sampling Frame is stratified by peak number of farm workers or potential to have farm workers.

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**

The Agricultural Labor Survey list frame is stratified by peak number of farm workers. Operations that do not have a known value for peak number of farm workers are grouped into two categories - farm labor intensive and farm labor less intensive - and stratified by FVS. The sampling rate increases as the stratum number increases (from stratum 30 to stratum 98).

Stratum Descriptions for List Records		
Stratum	Description	Farm Value of Sales/Hired Workers
30-31	EDD (CA only)	Crop Prep and Cotton Ginnings Workers
41-49	Agricultural services (CA only)	Agricultural serviced firms with peak hired workers control data
85	Small farms	\$10,000 - \$99,999 FVS and no peak hired worker data
86	Medium/large farms classified on farms less likely to have agricultural workers	\$100,000 - \$499,000 FVS and no peak hired worker data
87	Medium/large farms classified on farms more likely to have agricultural workers	\$100,000-\$499,000 FVS and no peak hired worker data
88	Medium/large farms	\$100,000-\$499,000 FVS and no peak hired worker data
89	Very large farms	\$500,000+ FVS and (0 peak hired workers and no peak hired worker data)
90	Hired workers classified on number of peak agricultural workers	All farms with 1-4 peak hired workers control data
91	Hired workers classified on number of peak agricultural workers	All farms with 5-9 peak hired workers control data
92	Hired workers classified on number of peak agricultural workers	All farms with 10-19 peak hired workers control data
93	Hired workers classified on number of peak agricultural workers	All farms with 20-49 peak hired workers control data
94-98	Hired workers classified on number of peak agricultural workers	All farms with 50+ peak hired workers control data

The NASS area frame is stratified by land use before Primary Sampling Units (PSUs) are delineated within each land use strata. Secondary Sampling Units (segments) are delineated within each selected PSU before segments are

sampled. Tracts are delineated within each selected segment during personal enumeration.

The land use strata are:

- Heavily cultivated land
- Less heavily cultivated land
- Residential or ag-urban land with potential for agricultural use
- Pasture or grazing land
- Completely nonagricultural land

The June Area Survey records that are NOL with the list sampling frame for the Labor Survey are determined in late June. Operations with less than \$1,000 of FVS are not included in the Labor Area Frame population because they do not meet USDA's definition of a farm (having at least \$1,000 of FVS).

NOL tracts from the area frame are stratified by peak number of farm workers; however, the highest two strata (21 and 22, see below) are stratified by peak number of farm workers and expansion weights.

<b>Area Labor Stratum</b>	<b>Description</b>
3	0 or missing peak workers
11	1-4 peak workers
12	5-9 peak workers
13	10-49 peak workers
14	50-99 peak workers
15	100+ peak workers
21	Labor stratum 3 records with high expansion factors
22	Labor stratum 11 records with high expansion factors

Generally, all NOL records in stratum 11 and above are included in the sample. In contrast stratum 3 is sampled at less than 100 percent.

A sampling scheme is employed to control the amount of overlap between operations that are sampled for the Quarterly Labor 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.**

*Data Collection:* Generally, a cover letter and sample questionnaire are mailed to the list sample prior to each survey. The letter alerts respondents that they will be contacted at a later date and encourages them to enter data on the sample questionnaire for the reference week so that it will be readily available when they

are contacted by an enumerator. The respondents are also given the option of filling out the questionnaire and returning it by mail if they choose to. This procedure allows respondents to compile data at their convenience and reduces interview time when they are contacted.

Included with the cover letter, operations are also given the opportunity to respond online. They are provided a link to a website along with a personalized, secure key code that will allow them to access only their questionnaire and provide their information in a secure manner.

Regional Field Offices will attempt to contact non-respondents (mail or internet) by either telephone or personal visits. Telephone data collection is done primarily through a Data Collection Center using a computer-assisted telephone interviewing (CATI) instrument which automatically displays forms and manages call-backs and appointments for the enumerators. Those operations expected to have a large number of workers or have multiple operations are typically assigned to enumerators for personal visits.

Estimates will be generated for number of workers, hours worked, and wage rates. The data will be summarized and published for 18 Farm Labor Regions. The regions are defined in the *Farm Labor* publication attached to this OMB submission.

The sample is designed to meet U.S. and regional target coefficients of variation for hired workers and wage rates by Standard Occupational Classification (SOC) codes.

The NASS Farm Labor Survey publication will continue to include summarized data tables using the Department of Labor's Employment and Training Administration (ETA) worker categories. In November 2015 NASS began to include tables with the farm labor data summarized using the SOC codes.

Survey data are subject to non-sampling errors such as omissions and mistakes in reporting and in processing the data. While these errors are not measured directly, they are minimized by NASS staff reviewing all reported data for consistency and reasonableness through an Interactive Data Analysis System (IDAS).

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

There are (or have been) several qualitative and quantitative projects occurring for the Agricultural Labor Survey.

A new version of the Agricultural Labor Survey CATI instrument was developed in June 2017 to improve the accuracy of farm worker categorization by labor type (field, livestock, supervisor, and other workers). A sub-sample of the 2017 October Labor Survey sample was selected to test the instrument.

In November of 2017, OMB approved NASS to conduct up to 100 cognitive interviews (OMB # 0535-0248) with farm operators who directly hire workers, and contractors who provide farm workers to farm operations. This was in response to a request by the USDA to separate gross wages into base wages and incentive pay/overtime pay.

Iterative cognitive testing was conducted on a revised version of the Agricultural Labor Survey questionnaire from December 2017 to February 2018. A total of 26 cognitive interviews were completed with operators, and 16 were completed with contractors. After analysis of the results, the questionnaire was further revised to include questions for bonus pay and overtime pay, in addition to base wages. Additional cognitive testing is being conducted in September and October 2018 to determine if respondents can answer questions on base and overtime hours to provide better hourly wage rates for workers.

Although the cognitive testing focused on base wages, incentive/bonus pay, overtime pay, and gross wages paid, several other items in the questionnaire were revised. The revisions included formatting, response options given, and instruction placement and wording.

A bridge study was conducted during the April 2018 survey and another one is scheduled for October 2018 Agricultural Labor Surveys to evaluate how the new questionnaire version performs, relative to the old questionnaire. If evaluations of the bridge studies are favorable, the first publication based solely on the new questionnaire (that includes questions on base wage and bonus pay and/or overtime wages) is anticipated to occur for the April 2019 Agricultural Labor Survey.

For the bridge studies, the operational survey sample will be divided into two subsamples: one will receive the original questionnaire and another will receive the new questionnaire. Specifically, five of six sample replications will be assigned to the original questionnaire and the remaining replicate will be assigned to the new questionnaire. Analysis shows the resulting CVs from using five replicates will increase slightly, however, the resulting CVs will still meet the majority of NASS's precision standards. To improve the precision of data collected using the new questionnaire, one non-overlapping replicate from the 2019 April sample will be assigned to receive the new questionnaire. Hence, two replicates were assigned to the new questionnaire in the bridge studies (April 2018 and October 2018).

Data collection modes (paper, CATI, internet, and face to face enumeration) and other survey procedures will be identical for the two samples to help minimize potential for bias in the data.

For the bridge studies, the power of the test of the samples allocated to the old and new questionnaire was calculated using the following formula:

$$Z_{power} = Z_{(1-\beta)} = \frac{\Delta}{se(\Delta)} - Z_{(1-\alpha/2)}$$

Where:

Z is the z-score for the standard normal distribution.

$\alpha$  is the Type I error

$\beta$  is the Type II error

Power is  $1-\beta$ .

$\Delta$ , or delta, is the difference between the wage rates indications derived from the samples allocated to the original and new questionnaires, and  $se(\Delta)$  is the standard error of delta.

A 4% relative margin of error and \$12.50 wage rate results in a delta value of \$0.50. Using previous survey data and an alpha of 5%, the resulting power is 83%.

The bridge studies will allow NASS to evaluate the national-level performance of the historic gross wage data series as well as the additional base wage and incentive/overtime data series. The bridge studies will allow for a broad test of the new questionnaire content while maintaining a sufficient sample size with the current operational questionnaire to ensure the ability to support the current data series in the April and October 2018 publications.

After the April 2018 and October 2018 bridge studies, NASS will evaluate data quality obtained from the old versus new questionnaires. The results of these evaluations will be made available on NASS's website. The evaluations will focus on quantitative and qualitative metrics of data quality and may include results of analyses on:

- Record-level and item-level non-response.
- Differences in reported data overall, and by domain (worker categories, geographical regions, and farm types).
- Qualitative findings from analyzing the recorded interviews using Computer Assisted Recorded Interviews (CARI).

NASS will use four data summaries for the evaluation reports. The summaries will include: one using data obtained from the current operational (old) questionnaire, one using data obtained from the new questionnaire (that includes questions on base wage and incentive pay and/or overtime wages), one using the full sample (i.e., data obtained from both the old and new questionnaires), and one using extreme operator data obtained from the new questionnaire with data from the old questionnaire. Data will be analyzed at national and regional levels.

Collectively, these summaries and evaluations will reveal whether using the new questionnaire impacts the historical gross wage data series, as well if the new questionnaire adequately collects the expanded data (base wage rates and incentive/overtime pay). Non-substantive changes and further testing of the new

questionnaire may be needed if the evaluations reveal unfavorable results.

The evaluation reports for the April 2018 and October 2018 bridge studies will be made available to the public by September 30, 2018, and March 31, 2019, respectively.

After assessing the efficacy of using the new Agricultural Labor questionnaire through the bridge study evaluations, NASS will determine if the new form will be (solely) used for the April 2019 Agricultural Labor Survey. The following criteria will be used to determine whether or not the new questionnaire is used for the April 2019 Agricultural Labor Survey:

- The unit response rate for the new questionnaire will be no more than 10% less than the old questionnaire.
- Item non-response for gross wages on the new questionnaire will be no more than 10% greater than for the old questionnaire.
- Unweighted item non-response for base wages on the new questionnaire will not exceed 40%, or weighted item non-response for base wages on the new questionnaire will not exceed 25%.
- The coefficient of variation (CV) for gross wages at the national level obtained from the new questionnaire will meet NASS's target CVs, with no more than 10% increase in sample size.

If the new questionnaire is adopted, data users will be made aware of the change to the instrument through specific notes in the publication from the April 2019 survey. Also, as with all program changes, the Agricultural Statistics Board issues public notices to notify users at the USDA Data User's Meetings held usually in April of each year.

In addition, since the Agricultural Labor Survey response rates have been around 55%, NASS is planning to conduct several activities to analyze the effect of non-response in the Agricultural Labor Survey.

First, a review of BLS nonresponse bias studies regarding wages will be completed to determine if NASS can emulate other statistical agency's nonresponse bias studies.

Second, overall R-indicator (Schouten et al. 2009) will be computed using List Sampling Frame (LSF) variables as the predictors in logistic regression. The following variables are recommended:

1. Labor region
2. Farm type (bin into field crops, other crops, and livestock/dairy/poultry)
3. Categorical Gross value of sales - \$1000 (bin into <50, 50-99, 100-249, 250-499, 500-999, and 1000+)
4. Categorical Number of Peak Workers (bin into 1, 2, 3-6, 7-10, 11-20, 21-50, and 51+)

5. Continuous Peak Workers (needs some imputation)
6. Continuous VOS (needs some imputation)

Third, the LSF control data will be used as proxy data for the non-respondents to create a “complete” dataset. Comparisons using the LSF can be made between the respondents and non-respondents based on three variables: Peak Number of Hired Workers, Gross Value of Sales, and Type of Farm. Statistical significance will be determined by t-tests comparing the mean number of hired workers at the strata level and by their value of sales and type of farm distributions. Additional analysis comparing the distribution of Value of Sales and Type of Farm between respondents and non-respondents will be completed using chi-square tests.

Last, California worker and wage data is collected in cooperation with California’s Employment Development Department (EDD). Since the data collection timeline is slightly different for EDD than NASS, a batch of late reports are sent after the April and October data collection periods. We will re-summarize the California data including these late reports as a proxy for non-respondents and use t-tests to compare the wage rates with the operational summary at the strata level. NASS’s Labor program has undergone some significant change, and testing during 2018. Multiple questionnaires, split samples, and alternative measurement concepts have all been part of the 2018 program. The nonresponse bias study proposed will be completed after all 2019 quarterly data are collected utilizing the same questionnaire, full samples, and uniform measurement concepts. We anticipate a delivery date of July 2020.

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

The summary, analysis and disclosure will be handled by the Summary, Estimation and Disclosure Methodology Branch, Methodology Division; Branch Chief is Jeff Bailey, (202) 690-8141.

Data collection is carried out by NASS Field Offices. The Field Operations Director is Jay Johnson, (202) 720-3638.

The NASS survey statistician in charge of the Agricultural Labor Survey in the Environmental and Economic Surveys Section of the Survey Administration Branch, Census and Survey Division is Shareefah Williams, (202) 690-3692. She is responsible for coordination of sampling, questionnaires, data collection, training, Interviewers Manual, Survey Administration Manual, data processing,



and other Field Office support. The Census and Survey Division, Survey Administration Branch Chief is Gerald Tillman, (202)720-3895.

The NASS commodity statistician in charge of the Agricultural Labor Survey in the Environmental, Economics and Demographics Section of the Environmental, Economics, and Demographics Branch, Statistics Division is responsible for national and regional summaries, analysis, and presentation of data to the Agricultural Statistics Board for final estimates, publication, and the Estimation Manual. The Statistics Division, Environmental, Economics and Demographics Branch Chief is Jody McDaniel, (202) 720-6146.

The cognitive testing has been conducted under the leadership of Heather Ridolfo (202) 692-0293 in the Research and Development Division.

September 2018

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