

Supporting Statement B

PAYING FOR COVER CROPS: DOES EXPERIENCE CHANGE FARMER INCENTIVES? COGNITIVE INTERVIEWS

COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection methods 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 had been conducted previously, include the actual response rate achieved during the last collection.

Note: response rate means: Of those in your respondent sample, from what percentage do you expect to get the required information (if this is not a mandatory collection). The nonrespondents would include those you could not contact, as well as those you contacted but who refused to give the information.

This study will conduct qualitative cognitive interviews to support the development of a survey on farmer enrollment in cover crop programs. The main objective of the interviews is to test respondents' understanding of cover crop contracts presented in the survey. To do so, the interviews will be focused on obtaining in-depth information on respondents' interpretation of the features of the contracts, the impact of alternate question formats, and how respondents made choices about enrollment. Respondents will be asked open-ended, qualitative questions that allow for discussion following best practices for the use of cognitive interviews in survey development¹. Interviews will be conducted iteratively with non-substantial changes to the survey instrument after each round of interviews.

The target population consists of row crop farmers that have used or may use cover crops in regions with predominantly corn-soy systems. For the cognitive interviews, our convenience sample will primarily be drawn from farmers engaged with local Natural Resources Conservation Service (NRCS) offices in Iowa, Indiana, Missouri, Michigan, Wisconsin, and Kansas. The dominant cropping system in these states is primarily corn-soy, with significant livestock production in Wisconsin, and additional variation in crops (wheat, sorghum) and average annual rainfall represented by Kansas. Based on several Federal data sources, we estimate that there are roughly 137,000 corn and soybean farmers in these six states. In 2019, across the six states there were roughly 17,000 farms reporting cover crops on Farm Service Agency (FSA) form 578. Across the six states, there were roughly 10,000 farmers with EQIP or CSP contracts that included cover crops or a cover crop enhancement between 2017-2021 recorded in the Protracts database of conservation contracts.

¹ Kaplowitz, M., F. Lupi, and J. Hoehn, "Multiple-methods for developing and evaluating a stated preference survey for valuing wetland ecosystems." Ch. 24 In *Questionnaire Development, Evaluation, and Testing Methods*, (S. Presser, et al., eds). 503-524. Wiley:New Jersey. 2004.

We will work with NRCS officials at the NRCS Soil Health Division to identify a convenience sample of farmers in Iowa, Indiana, Missouri, Michigan, Wisconsin, and Kansas. We will contact individuals who currently or recently participated in EQIP and Conservation Stewardship Program CSP and select farmers with a range of experience with EQIP and CSP, as well as a range of experience with cover crops. In addition, we plan to work with local NRCS and FSA offices in the same states to contact farmers with no EQIP or CSP experience, however, if local NRCS and FSA offices are not able to identify farmers without program experience we will draw from other sources as needed.

NRCS officials will recruit 450 farmers to participate in interviews, and because we will be reaching out in coordination with trusted officials who have established relationships with farmers, our estimated response rate is 10%. We will conduct no more than 45 interviews.

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, and**
- **Any use of periodic (less frequent than annual) data collection cycles to reduce burden.**
- **If you are selecting a uniform respondent universe, you may be using simply a random numbers table to select a sample.**

Stratified sampling is often used when the sampling population can be split into non-overlapping strata that individually are more homogeneous than the population as a whole (e.g. gender and age groups). If there are no obvious "dividing lines", grid lines can be used to divide the population. Random samples are taken from each stratum (or class) and the results are combined to estimate a population mean. Stratified sampling is most successful when the variance within each stratum is less than the overall variance of the population

We will use a convenience sample identified by Regional Soil Health Specialists that includes row crop farmers that have used or may use cover crops. We will not be statistically extrapolating information from the results of this study and will only be using results to improve the final survey instrument. Farmers with different levels of experience with cover crops and USDA conservation programs will be identified by collaborators at NRCS offices, and farmers without EQIP or CSP experience will be identified through county NRCS offices, FSA, and other sources as needed. We will target the following in our sample. These numbers represent a maximum.

Targets by program participation and cover crop experience (combined)

- Program non-participants: 10
 - 5 who have cover cropped
 - 5 who have never cover cropped
- Current/former EQIP or CSP participants: 35

- o 25 who have cover cropped
- o 10 who have never cover cropped

By farm resource region and cropping system (combined)

- Northern crescent (MI, WI):15
 - o 10 in corn-soy mixes
 - o 2 in continuous corn
 - o 3 in other crop systems
- Heartland (IA, IN, MO): 25
 - o 15 in corn-soy mixes
 - o 5 in corn-soy-wheat systems
 - o 5 in other crop systems
- Prairie gateway (KS): 5
 - o 2 in corn-soy mixes
 - o 3 with wheat in the rotation

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.

Any aspect of your plan which makes it easier and more attractive to comply with the request for information, would tend to maximize response rate. This would include:

Such steps as pre-notification and various types of follow-up with those who did not respond at the first opportunity (give details, e.g. intervals for follow-up, type(s) of follow-up, how many times you will follow up)

Making the questions as simple and brief as possible

Already having a good working relationship with this group and/or the group's perception that actions based on the information collected would be helpful to them.

All NPS submissions are required to identify a plan to address nonresponse. This means that a large enough number of respondents didn't give information so that there is a possibility that their answers as a group might have differed significantly from those who did respond. Following up with non-respondents – resending surveys or sending a shorter version of the survey, trying a phone interview if possible, etc. are all effective strategies.

ERS has an inter-agency agreement with NRCS that is being routed for signatures that outlines collaboration with the agency to recruit participants for the cognitive interviews. We will take multiple steps to promote response. We will reach out to recruit participants through trusted officials with established farmer networks using multiple modes of contact and send follow-ups to those who do not respond to the first invitation. Notifications to individuals are as follows.

For all farmers:

1. An NRCS official will reach out to recruit potential participants using the farmer's preferred mode of contact (email, phone call, or text message) and ask if they are willing to share their email address and phone number with the research team. [Attachments 5a, 5b, and 5c]

For farmers who prefer to be contacted by email:

2. First email invitation to the survey [Attachment 6a]
3. Follow-up email invitation to the survey for those who did not respond, approximately three days after the first invitation [Attachment 6b]

For farmers who prefer to be contacted by phone:

2. Phone call invitation to the survey [Attachment 7].
3. Follow-up phone call invitation to the survey for those who did not answer, approximately three days after the first call.'

For farmers who prefer to be contacted by text:

2. First text invitation to the survey [Attachment 8a].
3. Follow-up text invitation to the survey for those who did not respond, approximately three days after the first invitation [Attachment 8b]

For all farmers:

4. An email with link to the scheduled video call [Attachment 9]

4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of test may be submitted for approval separately or in combination with the main collection of information.

Pilot surveys of 10 or more are often conducted, and must go through the PRA approval process.

The research team plans to test the Qualtrics instrument prior to conducting cognitive interviews by conducting at least 3 and no more than 9 trial interviews with farmers who have relationships with Michigan State University Extension offices. These trials will be used to refine the functionality of the Qualtrics design, include aspects such as field selection and choice experiment attribute randomization.

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

The following individuals were consulted on statistical aspects of the design:

- Frank Lupi (MSU), 517-432-3883
- Scott Swinton (MSU), 517-353-7218
- Matthew Gammans (MSU), 616-204-4506
- Ying Wang (MSU)
- Steven Wallander (USDA-ERS), 202-694-5546
- Maria Bowman (USDA-ERS), 504-8963
- Bryan Pratt (USDA-ERS), 816-926-2613
- Sophia Tanner (USDA-ERS), 816-926-1550

Frank Lupi will lead the implementation of the cognitive interviews. Interviews will be conducted by members of the project team and attended by at least one additional CIPSEA-trained member of the project team to take notes.