SOCIAL SCIENCE-BASED EVALUATION OF SCOTT COUNTY'S TECHNICAL ASSISTANCE AND COST SHARE PROGRAM

CLEAN WATER LAND & LEGACY AMENDMENT

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SOCIAL SCIENCE-BASED EVALUATION OF SCOTT COUNTY'S TECHNICAL ASSISTANCE AND COST SHARE PROGRAM

A Final Technical Report
Prepared
for Scott County, Minnesota

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Contents

Acknowledgements i
Summary 1
Project Background 2
Methodology 3
Findings 4
I. Respondent Profile 4
II. Experience and Satisfaction with the Program 8
III. Motivations for Program Participation 10
IV. Perceptions of Financial Assistance Offered through the Program 11
V. Beliefs about Conservation Practices 13
VI. Current and Future Conservation Actions 18
VII. Beliefs about Water Resources 20
VIII. Participant Recommendations 22
IX. Subgroup Comparison 24
Discussion and Recommendations 27
References 30
Appendices 32
Appendix A: Survey Questionnaire 33
Appendix B: Cover Letter 46
Appendix C: Reminder Letter 48
Appendix D: Study Findings- Descriptive Statistics 50
Appendix E: Study Findings- Subgroup Comparisons 67

Summary

This report describes a social science-based evaluation of Scott County's Technical Assistance and Cost Share (TACS) program. This study was conducted by the Center for Changing Landscapes and the Department of Forest Resources at the University of Minnesota. Data were collected through a self-administered mail survey of 373 participants of Scott County's Technical Assistance and Cost Share program.

Key Findings:

- Overall, program participants are highly satisfied with various aspects of Scott County's Technical Assistance and Cost Share (TACS) program and the service provided by the Soil and Water Conservation District (SWCD) staff
- A majority of program participants are likely to work with SWCD staff in the future
- Most program participants reported that the TACS program has inspired them to take conservation action
- Program participants recommended that staff provide frequent feedback about the program, raise program awareness, reduce program complexity, and improve customer service
- The biggest drivers of program participation appear to be environmental benefits of conservation practices, participants' emotional connection to the land, and conservation ethic
- Availability of financial incentives was an important motivator for most respondents. A majority of respondents believed that they are receiving the right amount of financial assistance to install conservation practices and are willing to install practices again at the same level of financial assistance
- The biggest constraints to water resource conservation appear to be lack of personal financial resources, equipment, community financial resources, and community leadership

Recommendations:

- Continue to support the TACS program
- Focus communication on the environmental benefits of conservation practices and appeal to participants' conservation ethic
- Address individual and community-level constraints to water resource conservation

Project Background

This report describes a social science-based evaluation of Scott County's Technical Assistance and Cost Share (TACS) program. This study was conducted by the Center for Changing Landscapes and the Department of Forest Resources at the University of Minnesota.

Scott County's TACS program provides financial and technical assistance to landowners to implement conservation practices that protect and improve water quality. The program provides technical assistance for almost any practice, incentive payments for four practices, and cost share for 20 practices.

The overall objective of this study was to examine participants' perceptions of and experiences with Scott County's Technical Assistance and Cost Share program. Data were gathered through a self-administered survey of program participants to answer six overarching research questions:

1. What are program participants' experiences with and perceptions of the TACS program?
2. What are landowners' motivations for their participation in the TACS program?
3. What are landowners' perceptions of the practices implemented through the TACS program?
4. How likely are landowners to enroll in the TACS program in the future?
5. How do financial incentives (i.e., cost share) influence landowners' decisions to participate in the TACS program?
6. What recommendations do landowners have to improve the TACS program?

Methodology

Data were collected through a self-administered mail survey of 373 participants of Scott County's Technical Assistance and Cost Share (TACS) program. A list of program participants was obtained from Scott County. The list included landowners who have worked with the county's Soil and Water Conservation District (SWCD) staff between 2006 and 2016 to install a conservation practice on their property. The surveys were administered from February to April, 2017.

The questionnaire was developed based on literature review and feedback from project partners. The survey questionnaire included a variety of fixed-choice, scale, as well as open-ended questions. The questionnaire inquired about program participants' perceptions about the TACS program, their experiences working with the SWCD staff, their motivations for enrolling in the TACS program, and their current and future use of conservation practices. In addition, basic sociodemographic information and property characteristics were also gathered. Several questions were adapted from survey instruments used in previous studies of attitudes, beliefs and values of conservation behaviors (Davenport & Pradhananga, 2012; Davenport, Pradhananga, & Olson, 2014; Pradhananga, Perry, & Davenport, 2014; Prokopy et al., 2009). Each questionnaire was labeled with a unique identification number to track responses for subsequent mailings.

An adapted Dillman's (2014) Tailored Design Method was used to increase response rates. The survey was administered in three waves: (1) the questionnaire (Appendix A) with a cover letter (Appendix B), and a self-addressed, business reply envelope; (2) a replacement questionnaire with a reminder letter (Appendix C), and business reply envelope; and (3) a third replacement questionnaire with cover letter and business reply envelope.

Returned questionnaires were logged into the respondent database. Response data were numerically coded and entered into a database using Microsoft Excel 2010. Statistical analyses were conducted using Statistical Package for Social Sciences (SPSS release 21.0). Basic descriptive statistics were conducted to determine frequency distributions and central tendency of individual variables. In addition, subgroup comparisons were conducted between farmers and non-farmers for differences in their motivations for program participation, experience and satisfaction with the program, and beliefs about conservation practices.

The survey also included an open-ended question that asked respondents for their recommendations to improve their experience working with SWCD staff. The responses to this question were compiled and analyzed using standard qualitative analysis techniques (Charmaz, 2014; Corbin & Strauss, 2008). Data were analyzed using QSR Nvivo 11.0 data analysis software.

Findings

Overall, 198 program participants completed the survey for a response rate of 60% (adjusted for 33 surveys returned undeliverable). The study findings are organized into nine subsections. Complete statistics for all survey questions in aggregate are presented in tabular form in Appendix D. Findings from subgroup comparisons are presented in tabular form in Appendix E.

I. Respondent profile

Respondents were asked a series of questions about their socio-demographic background and property ownership characteristics.

A majority of respondents were male (85%) and not of Hispanic, Latino, or Spanish origin (99%). Almost all of the respondents described their race as white (99%). Respondents ranged in age between 29 and 91. Over half of the respondents (57%) had attained at least an associate or vocational degree. About half of the respondents (50%) reported an annual household income of $100,000 or more (Table 1).

A vast majority of respondents (81%) reported that their property borders a ditch, stream, lake, or river. Over half of the respondents (57%) used their property for agricultural production. Among respondents who used their land for agricultural production, the number of acres in agricultural production ranged between 2 to 2100, with a mean of 254 acres. Close to half of the respondents (49%) reported that their income is not dependent on agricultural production. Over three-fourths of respondents (79%) own and manage their own land, and almost three-fourths of respondents make their own management decisions on their property. Over one-third of respondents reported that their property had been damaged by the storms in 2014. Of the respondents whose property was damaged by the storms in 2014, 73% reported that they had repaired the damage (Table 2). Over half of the respondents (54%) own less than 40 acres of land. Among the respondents who rent their land to others, over one-half (57%) rent out 40 or more acres (Table 3).

Table 1. Respondents' sociodemographic characteristics

Socio-Demographic Characteristics		N	Percent
Gender	Male	164	85.4
	Female	28	14.6
Hispanic, Latino, or Spanish origin	Yes	1	0.5
	No	186	99.5
Race*	White	189	99.5
	Black or African American	0	0
	Asian	0	0
	American Indian or Alaska Native	0	0
	Middle Eastern or North African	0	0
	Native Hawaiian or Other Pacific Islander	0	0
	Other (e.g., human)	1	0.5
Age	Median	62	-
	Minimum	29	-
	Maximum	91	-
Years lived in community	Median	40	-
	Minimum	1.5	-
	Maximum	89	-
Formal education	Did not finish high school	11	5.8
	Completed high school	50	26.2
	Some college but no degree	22	11.5
	Associate or vocational degree	45	23.6
	College bachelor's degree	37	19.4
	Some college graduate work	6	3.1
	Completed graduate degree (MS or PhD)	20	10.5
Household income	Under $20,000	1	.6
	$20,000-$49,999	24	14.4
	$50,000-$74,999	30	18.0
	$75,000-$99,999	29	17.4
	$100,000-$149,999	44	26.3
	$150,000-$199,999	21	12.6
	$200,000-$249,999	3	1.8
	$250,000-$299,999	2	1.2
	$300,000 or more	13	7.8

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Questions 29, 36, 37, 38, 39, 40, and 41

*Respondents could give more than one response.

Table 2. Respondents' property characteristics

Property Characteristics		N	Percent
Land/property borders a ditch, stream, lake, or river	Yes	154	81.1
	No	36	18.9
Property used for agricultural production	Yes	109	57.1
	No	82	42.9
Acres in agricultural production[a]	Mean	254.0	-
	Median	100.0	-
	Minimum	2.0	-
	Maximum	2100.0	-
	<40 acres	33	30.8
	40 – 150 acres	33	30.8
	151 – 500 acres	28	26.2
	501 acres or more	13	12.1
Percent income dependent on land/property	0%	88	49.4
	>0% - 25%	38	21.3
	>25% - <50%	4	2.2
	50% or more	48	27.0
Ownership arrangement[b]	I own and manage my own land	151	79.1%
	I rent my land to another party	63	33.0%
	I rent my land from another party	34	17.8%
	Other (e.g., land trust)	6	3.1%
Management decisions on land/property	I make own decisions	141	73.4
	I leave it up to my renter	21	10.9
	I leave it up to the landowner/property owner	0	0.0
	I work together with renter/landowner to make decisions	30	15.6
Property damage in 2014 storms	Yes	71	37.2
	No	120	62.8
Repaired property damage caused by 2014 storms	Yes	59	72.8
	No	22	27.2

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Questions 30, 30a, 31, 32, 33, 34, and 35

[a]Acres reported for respondents who use their land for agricultural production (n = 107)

[b]Respondents could give more than one response

Table 3. Respondents' property size

	N	Median	Under 40 acres*	40 –150 acres	151 –500 acres	501 acres or more
Size of property owned	146	20.3	54.1	24.7	19.9	1.4
Size of property rented out	54	50.0	42.6	37.0	16.7	3.7
Size of property rented	33	200.0	15.2	30.3	33.3	21.2
Other (e.g., land trust)	6	55.05	50.0	33.3	16.7	0.0

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 34
*Percent

II. Experience and satisfaction with the program

Respondents were asked a series of questions about their experience and satisfaction with the TACS program. Respondents were asked to report how easy or difficult it was to work with the SWCD staff on a five-point scale from “very easy” (1) to “very difficult” (5). A vast majority of respondents (82%) reported that it was somewhat to very easy to work with SWCD staff (Appendix D, Table 1). Respondents were asked to report how helpful different aspects of the SWCD assistance were. A vast majority of respondents reported that planning/solution identification (89%), design and engineering (85%), financial assistance (82%), and staking/construction oversight (80%) were moderately to very helpful aspects of the SWCD assistance (Appendix D, Table 2). Respondents were also asked to report how well informed they were by the SWCD staff about the conservation practices they installed. An overwhelming majority of respondents (91%) reported that they were moderately to very informed about the conservation practices they installed (Appendix D, Table 3).

Respondents were asked to rate a series of statements about their satisfaction with various aspects of the TACS program on a five-point scale from “very dissatisfied” (-2) to “very satisfied” (+2). Overall, an overwhelming majority of respondents (91%) were somewhat to very satisfied with the SWCD staff. Over three-fourths of respondents were somewhat to very satisfied with the timeliness of payments/reimbursements (78%), the types of conservation practices available to address their needs (83%), and the amount of financial assistance offered (78%). A majority of respondents were also satisfied with the length of their contract (59%) and flexibility of the program (61%) (Appendix D, Table 4, Figure 1).

Respondents were asked to rate the importance and quality of six service characteristics. Respondents rated the importance of service characteristics on a five-point scale from “not at all” (0) to “extremely” (4). Respondents rated the service they received on a five-point scale from “very poor” (-2) to “very good” (+2). A majority of respondents (≥64%) rated all six listed service characteristics as very to extremely important. On average, the three most important service characteristics for respondents were “polite/courteous” (Mean = 3.49), “trustworthy” (3.47), and “knowledgeable” (Appendix D, Table 5). A vast majority of respondents (≥86%) rated the quality of service they received in all six areas as good to very good (Appendix D, Table 6).

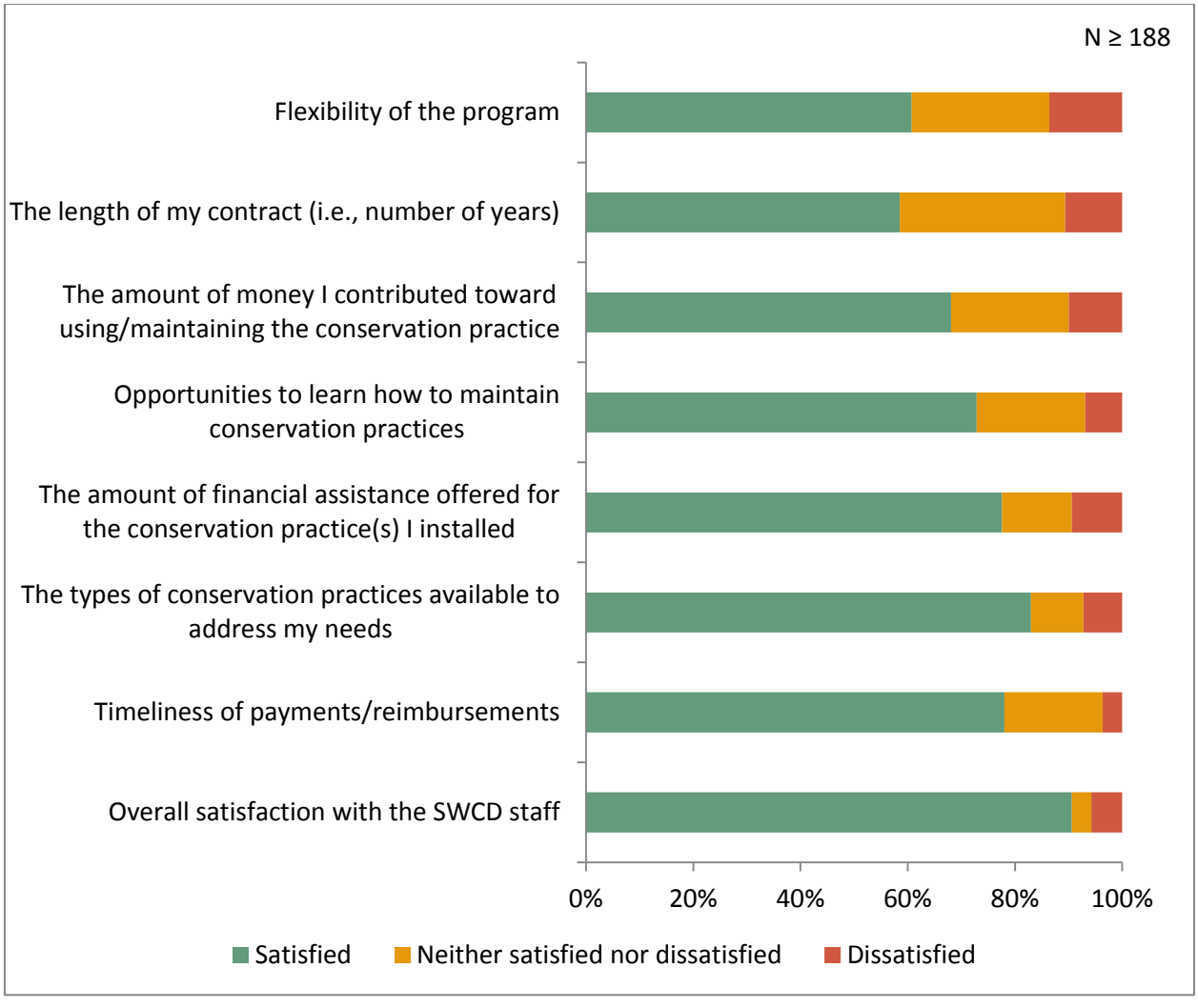

Figure 1. Respondents' satisfaction with aspects of the conservation assistance program

Respondents were asked to rate a series of statements regarding their beliefs about the assistance they received from SWCD staff on a five-point scale from “strongly disagree” (-2) to “strongly agree” (+2). An overwhelming majority of respondents (94%) somewhat to strongly agreed that the assistance from SWCD staff is important to water conservation in Scott County. A vast majority of respondents somewhat to strongly agreed that the assistance from SWCD staff has increased their knowledge of conservation practices (86%) and their ability to protect water (83%). Over three-fourths of respondents somewhat to strongly agreed that the assistance from SWCD staff has increased their knowledge of water resources (77%), inspired them to use conservation practices in the future (78%), and increased their sense of responsibility to protect water (76%). Almost one-third of respondents were unsure whether the assistance from SWCD staff has inspired them to talk to others about conservation (31%) and work with others to protect water (32%) (Appendix D, Table 7).

III. Motivations for program participation

Respondents were asked to rate a series of statements about their motivations for working with SWCD staff on a five-point scale from “strongly disagree” (-2) to “strongly agree” (+2). Environmental benefits (e.g., controlling erosion, protecting water resources) and emotional attachment to the land appear to be important motivators for respondents. An overwhelming majority of respondents somewhat to strongly agreed that they worked with the SWCD staff because it helps control erosion (93%) and protects water resources (95%). A vast majority of respondents (88%) somewhat to strongly agreed that they worked with SWCD staff because of their emotional connection to the land. A vast majority of respondents also agreed that they worked with SWCD staff because it helps protect groundwater (92%), improves wildlife habitat (90%), contributes to the collective good (92%), and because it is the right thing to do (91%). While a vast majority of respondents somewhat to strongly agreed that they worked with SWCD staff because they received financial assistance to install practices (83%), most landowners were either unsure or disagreed that the practice they installed increases yield (63%) (Appendix D, Table 8, Figure 2).

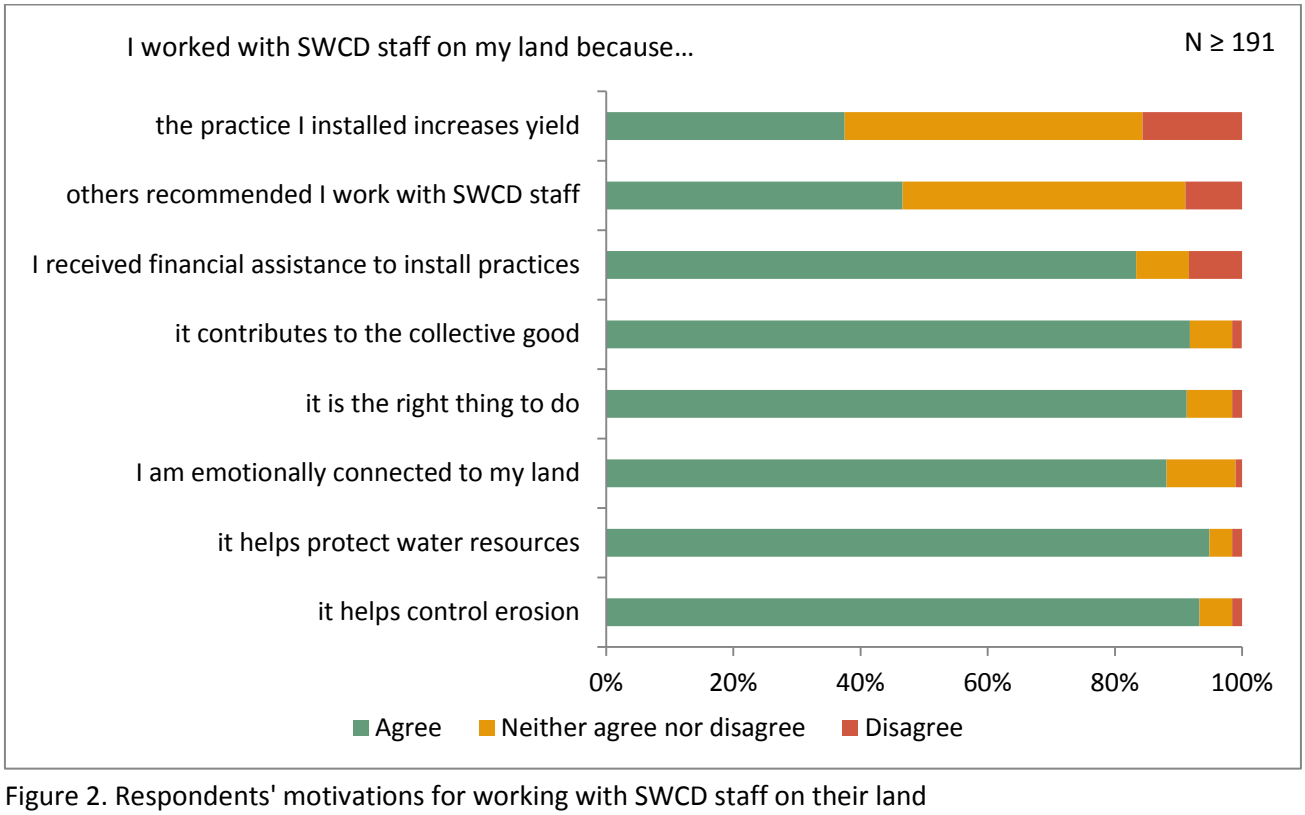

Figure 2. Respondents' motivations for working with SWCD staff on their land

IV. Perceptions of financial assistance offered through the program

Respondents were asked a series of questions regarding their perceptions of financial assistance and their likelihood of conservation practice adoption at various levels of financial assistance.

Respondents were asked about the amount of financial assistance they received from the program to install conservation practices. About three-fourths of respondents (74%) reported that they received about the right amount of financial assistance to install conservation practices (Appendix D, Table 9, Figure 3). Respondents were asked about the level of financial assistance at which they would be willing to install conservation practices again. Responses were coded as "at the same level I receive now" (1), "less than I receive now" (2), and "more than I receive now" (3). A majority of respondents (63%) reported that they would be willing to install conservation practices again at the same level they receive now. Almost one-third of respondents (32%) also reported that they would be willing to install conservation practices again if they receive more than they do now (Appendix D, Table 10, Figure 4).

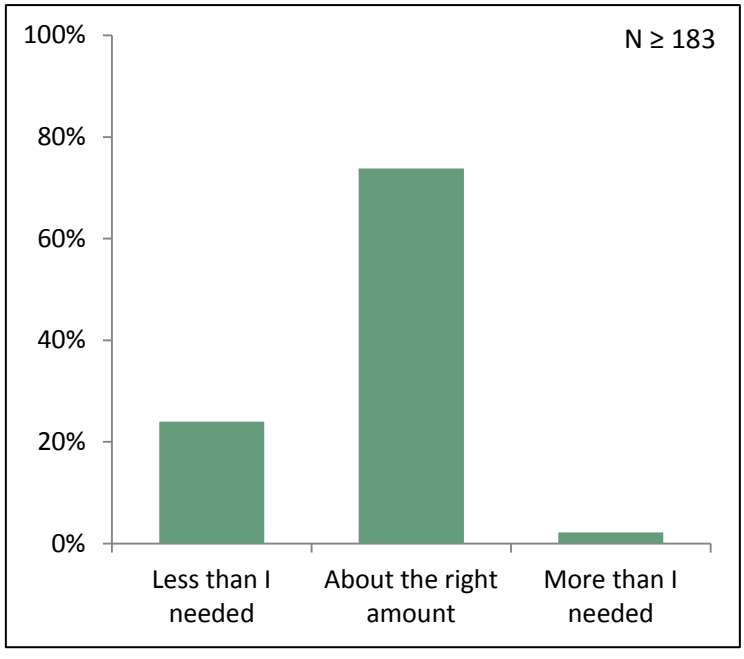

Figure 3. Respondents' perceptions about the amount of financial assistance they received to install practices

Respondents were also asked to rate the likelihood of conservation practice adoption at various levels of financial assistance (i.e., 0%, 25%, 50%, 75%, and 90%). Overall, respondents were more likely to install conservation practices at higher levels of financial assistance. An overwhelming majority of respondents (93%) reported that they are somewhat to very likely to install conservation practices at 90% financial assistance. A vast majority of respondents are also likely to install practices at 75%

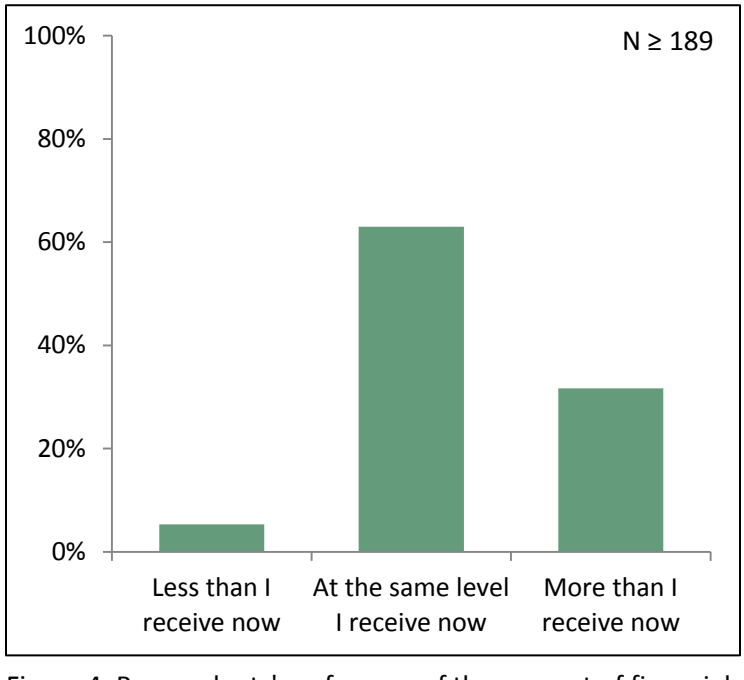

Figure 4. Respondents' preference of the amount of financial assistance to install conservation practices in the future

financial assistance. A little over half of the respondents (52%) are likely to install practices at 50% financial assistance. Over three-fourths of respondents were either unsure or unlikely to install conservation practices at 25% (76%) or 0% (81%) financial assistance (Appendix D, Table 11, Figure 5).

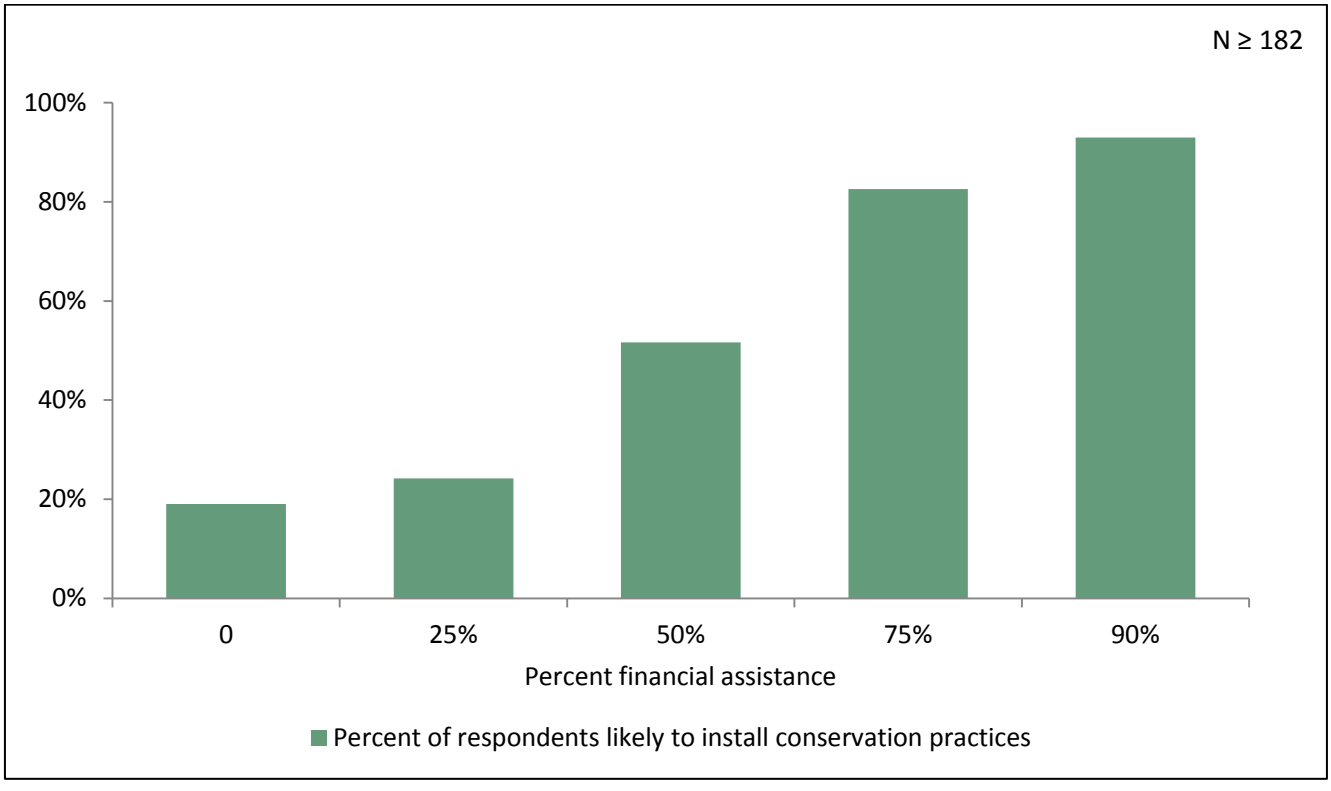

Figure 3. Percent of respondents likely to install conservation practices at various levels of financial assistance

Respondents were asked to rate two statements regarding their willingness to pay for conservation practices on a five-point scale from “strongly disagree” (-2) to “strongly agree” (+2). Almost two-thirds of respondents (65%) somewhat to strongly agreed that they are willing to contribute more toward maintaining conservation practices. A little over half of the respondents (53%) somewhat to strongly agreed that they are willing to use SWCD technical assistance and install conservation practices regardless of the amount of financial assistance they receive (Appendix D, Table 12).

V. Beliefs about conservation practices

Respondents were asked a series of questions about their experiences with and perceptions of conservation practices implemented through the program.

Ease of practice use

Respondents were asked to rate the ease or difficulty of using nine conservation practices on a five-point scale from "very difficult" (-2) to "very easy" (+2). On average, respondents rated native grasses (Mean = 0.65), filter strips (Mean = 0.61), and grassed waterways (Mean = 0.59) as the easiest practices to use. Over half of the respondents reported that it was somewhat to very easy to use native grasses (57%), filter strips (56%), and grassed waterways (55%). Most respondents reported that they were either unsure or that it was somewhat to very difficult to use practices such as conservation tillage (50%), water and sediment control basins (58%), cover crops (62%), and lakeshore restoration/stabilization (69%) (Appendix D, Table 13).

Respondents were asked to rate three statements regarding their beliefs about the conservation practices they installed on a five-point scale from "strongly disagree" (-2) to "strongly agree" (+2). Most respondents somewhat to strongly agreed that the practices they installed were compatible with their business plan (60%), were the easiest practices for them to install (63%), and were the practices they had a lot of knowledge about (58%) (Appendix D, Table 14).

Importance of practice outcomes and effectiveness of conservation practices

Respondents were asked to rate the importance of 11 practice outcomes on a five-point scale from "very unimportant" (-2) to "very important" (+2). Respondents were then asked to rate the effectiveness of the practices they installed in attaining those outcomes on a five-point scale from "very ineffective" (-2) to "very effective" (+2). Overall, the three most important practice outcomes were reducing soil erosion (Mean = 1.72), protecting groundwater (Mean = 1.68), and improving water quality (Mean = 1.68) (Figure 4). Reducing water runoff (95%), freedom in making decision on their land/farm (90%), maintaining their way of life (87%), and improving wildlife habitat (88%) were somewhat to very important outcomes of conservation practices for a vast majority of respondents. Increasing yield was an important outcome for fewer respondents (58%) (Appendix D, Table 15). A vast majority of respondents believed that the practices they installed were somewhat to very effective at reducing soil erosion (86%), reducing water runoff (86%), protecting groundwater (83%), improving water quality (84%), and improving wildlife habitat (76%). Most respondents also believed that the practices they installed were effective in maintaining their way of life (70%), and in "freedom in making decisions on their land/farm" (75%) (Appendix D, Table 16).

Respondents were asked to rate the extent to which they believe the use of conservation practices on their land will have an effect on several conditions or values. Responses were coded on a five-point scale from "worsen greatly" (-2) to "improve greatly" (+2). A vast majority of respondents believed that the use of conservation practices on their land will somewhat to greatly improve soil erosion (89%), water runoff (87%), wildlife habitat (79%), water quality (84%), and groundwater (82%). Overall, respondents also believed that the use of conservation practices will have a positive effect on several values. Most respondents believed that the use of conservation practices will somewhat to greatly improve their way of

life (69%), their freedom to make decision on their land/farm (69%), and their ability to “maintain the legacy of their farm” (61%). Most respondents (62%) also believed that the use of conservation practices will improve the value of their land. Over half of the respondents (54%) believed that the use of conservation practices will have no effect on yield (Appendix D, Table 17).

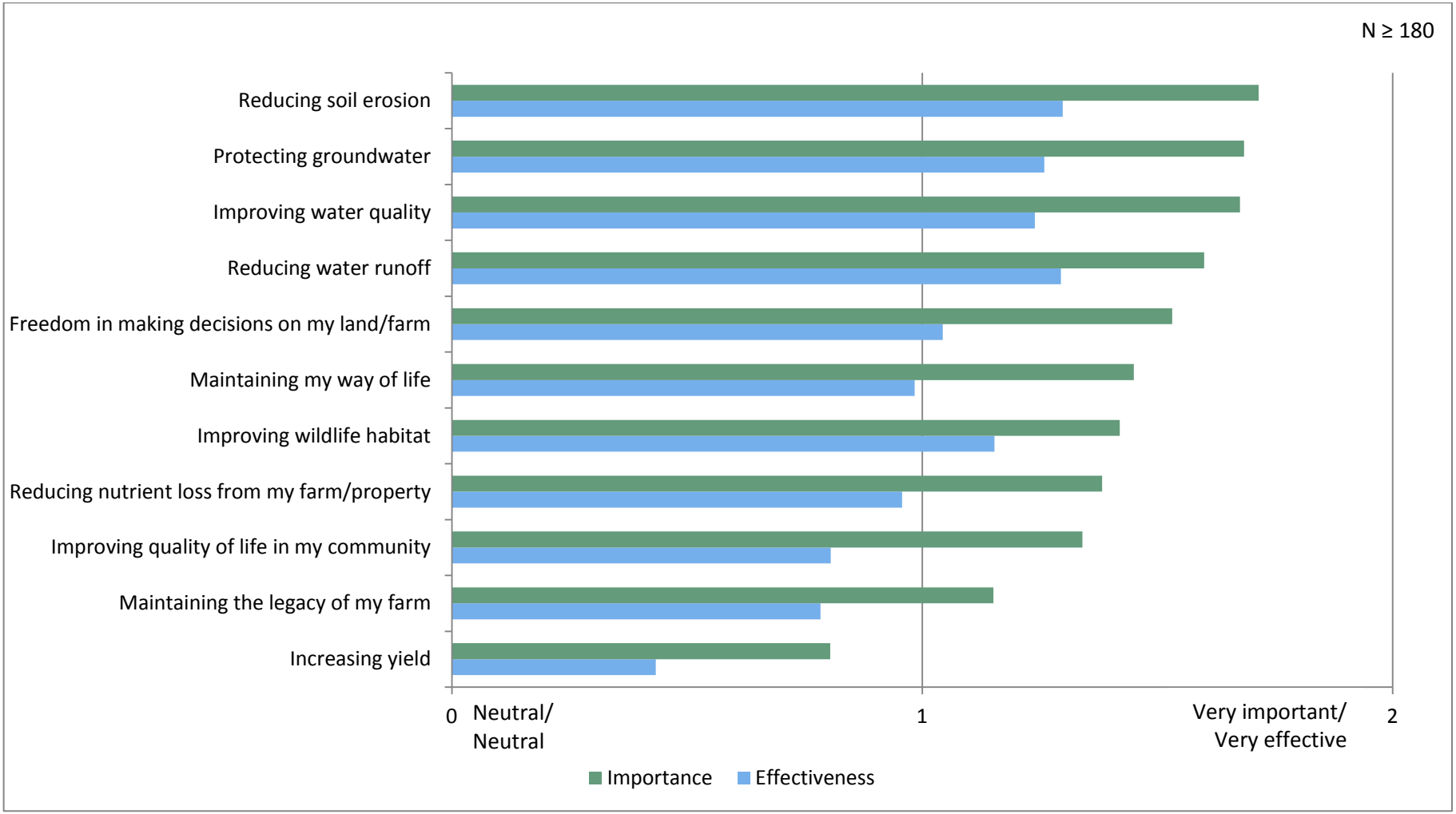

Figure 4. Importance of practice outcomes and effectiveness of conservation practices
Importance measured on a five-point scale from “very unimportant” (-2) to “very important” (+2)
Effectiveness measured on a five-point scale from “very ineffective” (-2) to “very effective” (+2)

Ability and efficacy of practice use

Respondents were asked a series of questions about their own ability and the ability of other landowners/farmers to use conservation practices.

Respondents were asked to rate three statements about knowledge and skills, financial resources, and equipment needed to use conservation practices on a five-point scale from "strongly disagree" (-2) to "strongly agree" (+2). A vast majority of respondents (82%) somewhat to strongly agreed that they have the knowledge and skills to use conservation practices on their land. However, fewer respondents agreed that they have the financial resources (50%) and equipment (39%) needed to use conservation practices (Appendix D, Table 18).

Respondents were asked to rate their own and other landowner/farmers' capability to use nine conservation practices on a five-point scale from "not at all capable" (0) to "very capable" (4). A majority of respondents believed that they are moderately to very capable of using practices such as native grasses (81%), grassed waterways (71%), filter strips (68%), and water and sediment control basins (61%). Most respondents reported that they are not at all capable of using "lakeshore restoration/stabilization" (56%) (Appendix D, Table 19, Figure 5). Most respondents believed that other landowners/farmers are somewhat to very capable of using all nine conservation practices listed. Over three-fourths of respondents believed that other landowners/farmers are somewhat to very capable of using practices such as filter strips (80%), conservation tillage (76%), and grassed waterways (76%) (Appendix D, Table 20, Figure 5).

Respondents were also asked about the effect of socio-structural factors (e.g., farm insurance programs, input prices, regulations) on their ability to use conservation practices. Respondents rated a series of 11 factors on a five-point scale from "detracted greatly" (-2) to "added greatly" (+2). Overall, respondents were mostly unsure of the effect of socio-structural factors on their ability to use conservation practices. Over one-third of respondents (41%) believed that financial assistance added somewhat to greatly to their ability to use conservation practices. A vast majority of respondents were unsure about the effects of farm insurance programs (90%), competition among farmers (78%), markets for alternative crops (80%), and high input prices (70%) on their ability to use conservation practices (Appendix D, Table 21).

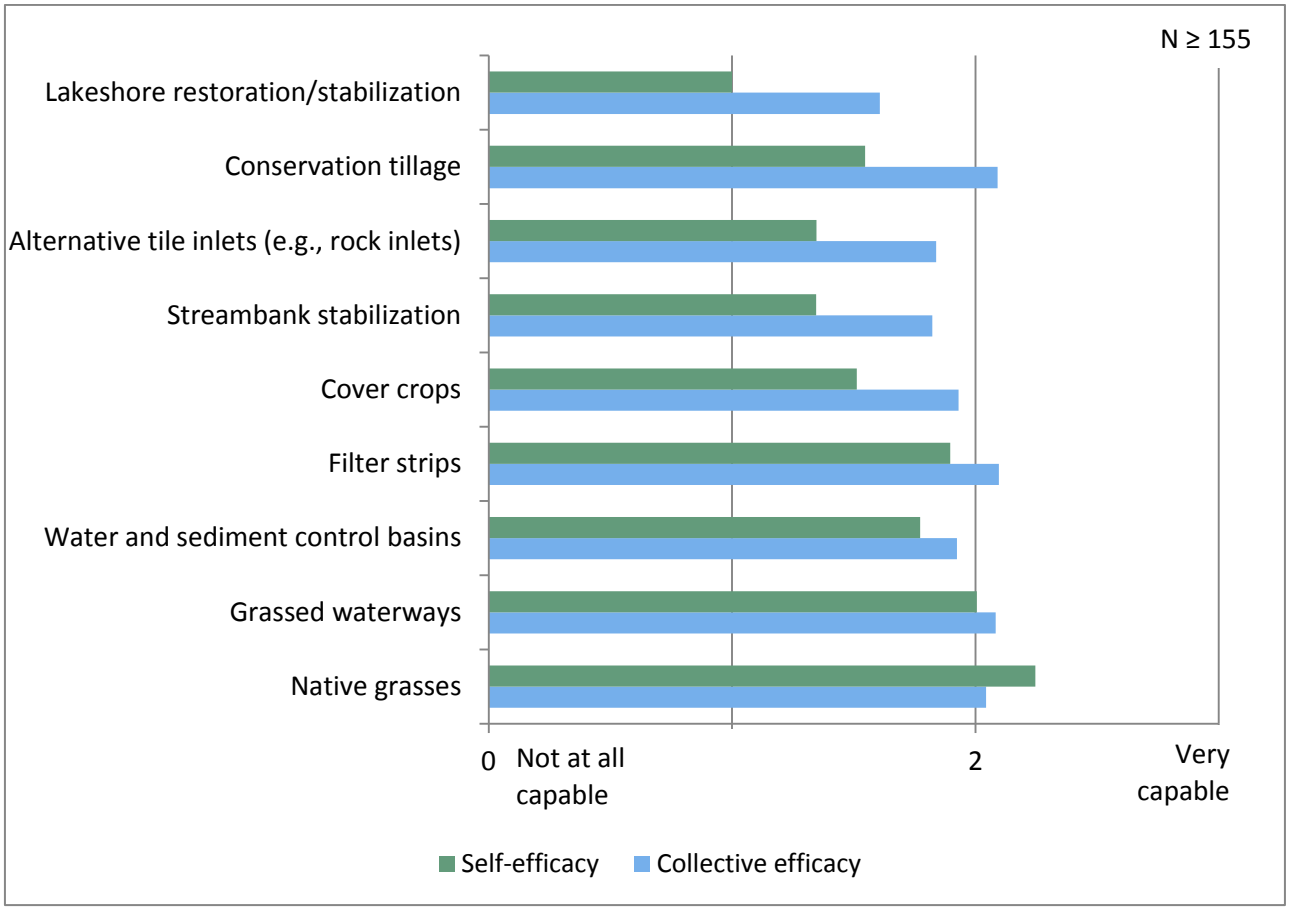

Figure 5. Respondents' average rating of self and collective efficacy (i.e., capability) to use conservation practices

Self and collective efficacy measured on a five-point scale from “not at all capable” (0) to “very capable” (3)

VI. Current and future conservation actions

Respondents were asked to report the extent to which they currently use nine conservation practices on their land on a five-point scale from “not at all” (0) to “in all possible locations” (4). Overall, the three most widely used practices were native grasses (Mean = 2.11), filter strips (Mean = 2.10), and grassed waterways (Mean = 1.80). Over two-thirds of respondents use practices such as native grasses (78%), filter strips (67%), and grassed waterways (67%) on at least one to a few locations on their land. Over half of the respondents also use water and sediment control basins (54%) and conservation tillage (51%) on at least one to a few locations on their land. A majority of respondents do not use practices such as streambank stabilization (58%), cover crops (55%), alternative tile inlets (60%), and lakeshore restoration/stabilization (75%) (Appendix D, Table 22).

Respondents were asked to report the extent to which they intend to use nine conservation practices on a five-point scale from “most certainly will not” (-2) to “most certainly will” (+2). A majority of respondents (62%) reported that they probably to most certainly will use native grasses on their land in the next 12 months. Over half of the respondents also reported that they probably or most certainly will use grassed waterways (53%) and filter strips (52%). A majority of respondents reported that they were either uncertain or that they probably to most certainly will not use practices such as lakeshore restoration/stabilization (81%), alternative tile inlets (78%), and streambank stabilization (68%) (Appendix D, Table 23, Figure 6).

Respondents were also asked about their likelihood of future conservation work with SWCD on a five-point scale from “very unlikely” (-2) to “very likely” (+2). A vast majority of respondents reported that they are somewhat to very likely to work with SWCD in the future (90%), recommend working with SWCD to other landowners (86%), and talk to others about working with SWCD (82%) (Appendix D, Table 24).

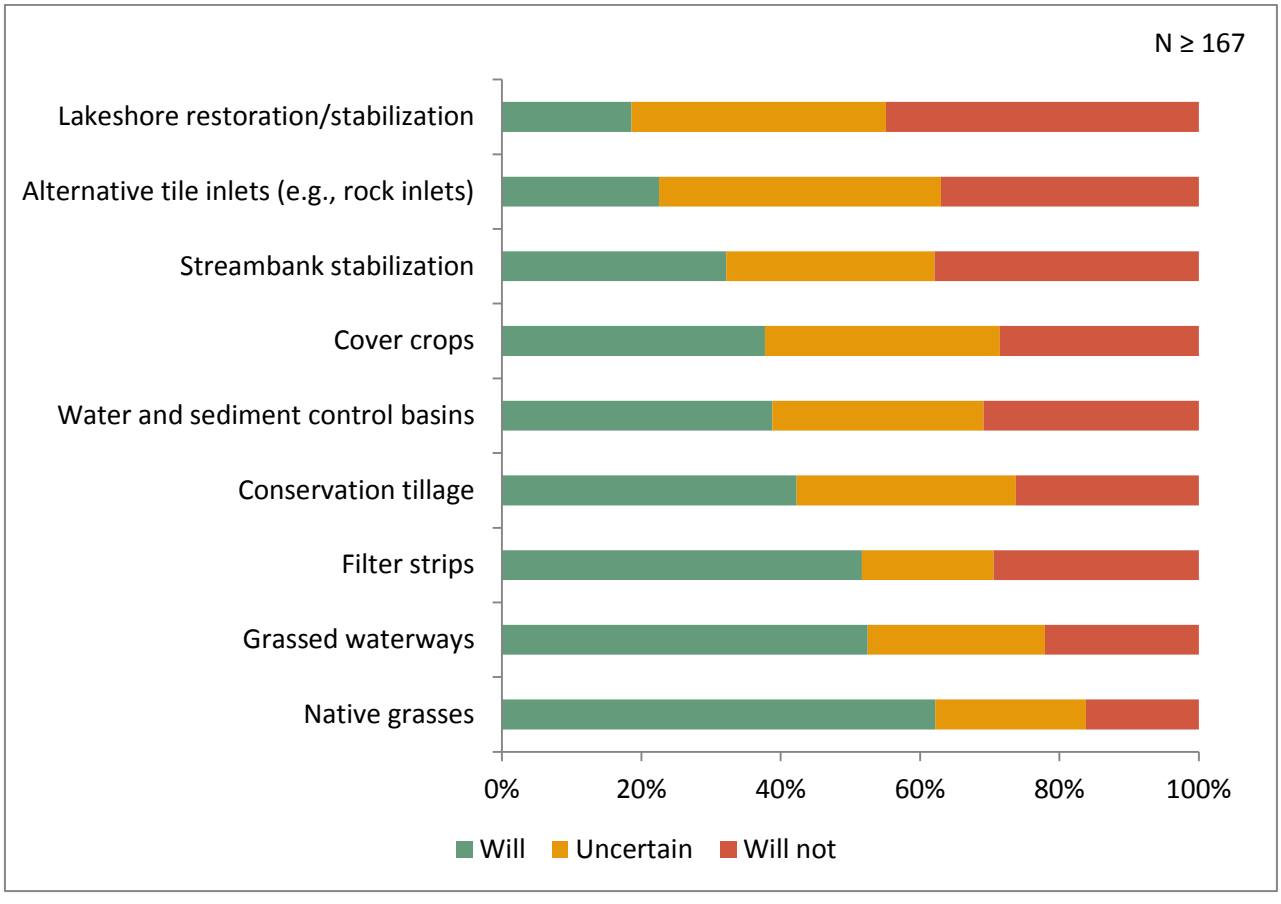

Figure 6. Respondents' intentions to adopt conservation practices on their land in the next 12 months

VII. Beliefs about water resources

Respondents were asked to rate their familiarity with water resource issues in Scott County on a five-point scale from “not at all familiar” (1) to “very familiar” (5). Over half of the respondents (59%) indicated that they were moderately to very familiar with water resource issues in Scott County (Appendix D, Table 25). Respondents were also asked to rate water quality in the stream, lake, or river closest to them and in Scott County on a five-point scale from “very poor” (1) to “very good” (5). Over three-fourths of respondents rated water quality in the lake, river, or stream closest to them (81%) and in Scott County (77%) as fair to very good (Appendix D, Table 26).

Respondents were also asked to rate a series of statements regarding their beliefs about water resource protection on a five-point scale from “strongly disagree” (-2) to “strongly agree” (+2). An overwhelming majority of respondents agreed that it is important to protect water resources (99%). A vast majority also agreed that it is their personal responsibility to make sure that what they do on their land does not contribute to water resource problems (97%) and that it is their personal responsibility to help protect water resources (95%). Over three-fourths of respondents (78%) also agreed that people who are important to them expect them to use conservation practices on their land. A majority of respondents agreed that landowners in their community have the ability to work together to change land use practices (73%). Fewer respondents agreed that their community has the leadership (52%) and financial resources (44%) it needs to protect water resources (Appendix D, Table 27, Figure 7).

Respondents were asked to rate three statements about their personal norms for water protection on a five-point scale from “strongly disagree” (-2) to “strongly agree” (+2). An overwhelming majority of respondents agreed that they feel a personal obligation to protect water resources (97%) and use conservation practices on their land (89%) (Appendix D, Table 28).

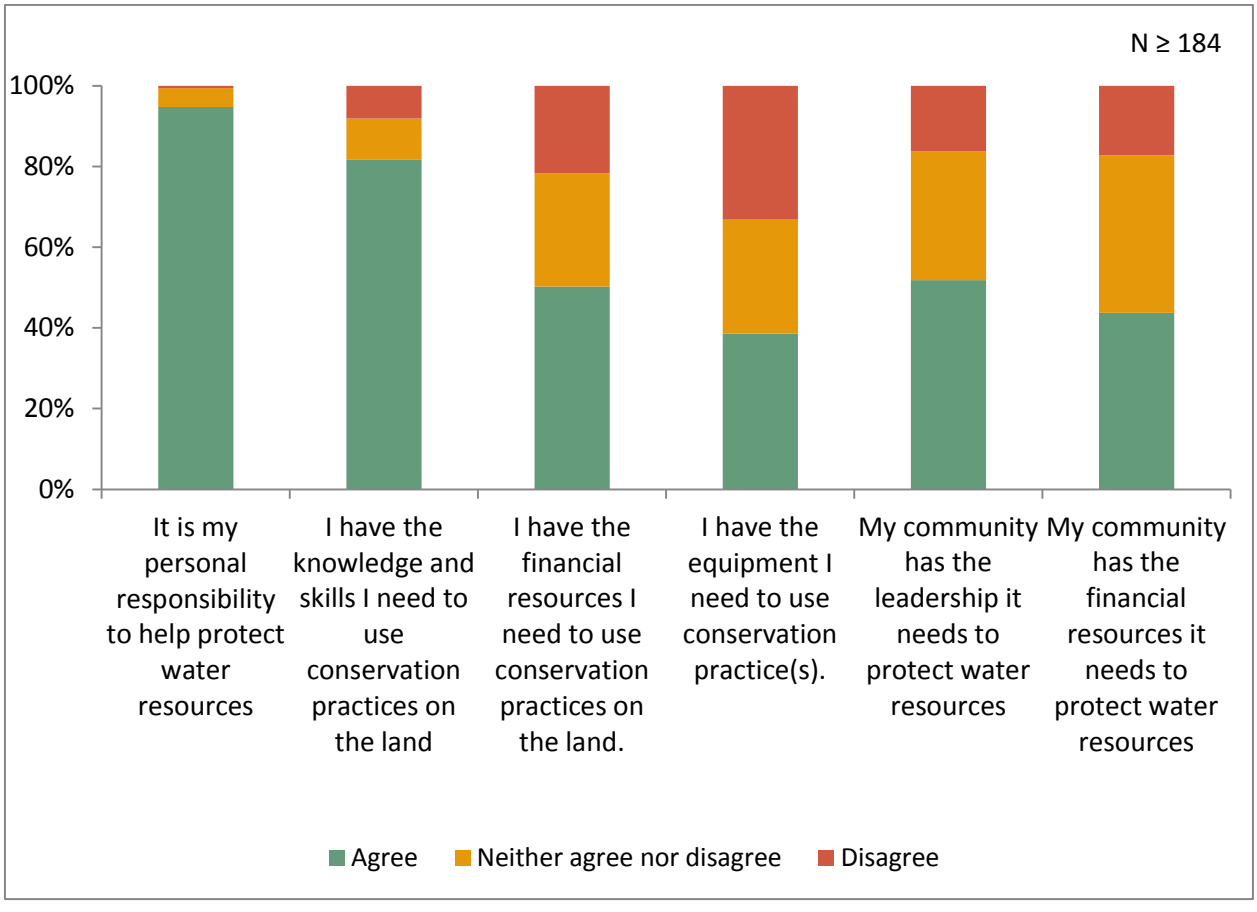

Figure 7. Respondents' beliefs about water resource protection and conservation practices

VIII. Participant recommendations

The survey included an open-ended question that asked respondents for their recommendations to improve the TACS program. Respondents offered four broad recommendations (Table 4):

i. Provide frequent feedback

Respondents recommended that program staff monitor project progress and provide feedback about costs of implementation, effectiveness of practices, and if additional steps are needed to address any ongoing concerns. Respondents also recommended that staff schedule frequent one-on-one, follow-up meetings (e.g., annually) with participants to answer questions and share information about the program.

ii. Raise program awareness and improve communication

Respondents recommended that program staff raise awareness of the program through one-on-one conversations, community meetings, and fliers. Respondents suggested that program staff should communicate frequently with program participants, particularly at the onset of a project. Respondents also wanted more information about practice implementation and maintenance, including information about contractors who can help implement practices.

iii. Reduce program complexity

Respondents reported that the process of working with government regulations is "cumbersome". One respondent suggested reducing contract length from 10 to 5 years. Another respondent recommended that the process could be simplified by reducing the number of forms participants have to complete. One respondent suggested improving timeliness of payments after project completion.

iv. Improve customer service

Respondents suggested hiring more staff to work directly with landowners. Respondents mentioned that staff should be knowledgeable about other programs (e.g., USDA programs). Other ways to improve the experience for participants were for staff to be timely and prepared during their visits.

Table 4. Respondents' recommendations to improve their experience working with the SWCD staff

Themes	Descriptors
Provide frequent feedback	• Monitor project progress • Provide feedback on project progress and costs of implementation • Schedule annual personal visits to provide more information about program and answer participant questions
Raise program awareness and improve communication	• Engage in one-on-one conversations with landowners and host community meetings to provide information about the program • Use fliers to advertise services available through the program • Provide information about contractors that can help implement practices • Communicate frequently with landowners especially at the onset of the project • Provide more information about practice maintenance • Improve communication lines within and across organizations
Reduce program complexity	• Reduce contract length • Reduce the number of forms • Improve timeliness of payments
Improve customer service	• Hire more staff • Knowledgeable, timely and prepared staff

IX. Subgroup comparison

There were some notable differences between respondents who use their land for agricultural production (i.e., farmers) and respondents who do not use their land for agricultural production (i.e., non-farmers). On average, farmers (Mean = 48) reported having lived in the community longer than non-farmers (Mean = 28.6 years) (Appendix E, Table 2). A greater proportion of farmers (47%) reported property damage from the 2014 storms than non-farmers (25%) (Appendix E, Table 3, Figure 8).

Farmers and non-farmers differed in their perceptions about the ease or difficulty of working with SWCD staff. Farmers (Mean = 1.90) reported to a greater extent that it was difficult to work with SWCD staff than non-farmers (Mean = 1.34). Some notable differences emerged between farmers and non-farmers in their level of satisfaction with the program. Overall, non-farmers (Mean = 1.69) were more satisfied with the SWCD staff than farmers (Mean = 1.31) (Appendix E, Table 4). Significant differences between farmers and non-farmers were also found in the importance and rating of service characteristics. Non-farmers (Mean = 3.61) placed greater importance on knowledgeable staff than farmers (Mean = 3.41). In terms of quality of service received, non-farmers (Mean = 1.73) were more likely to rate "knowledgeable" staff higher than farmers (Mean = 1.40) (Appendix E, Table 5).

Farmers and non-farmers also differed in their motivations for working with SWCD staff. Non-farmers agreed to a greater extent that they worked with SWCD staff on their land because it contributes to the collective good (Non-farmer mean = 1.70, Farmer mean = 1.32), helps protect water resources (Non-farmer mean = 1.78, Farmer mean = 1.48), helps improve wildlife habitat (Non-farmer mean = 1.76, Farmer mean = 1.31), and contributes to quality of life in their community (Non-farmer mean = 1.50, Farmer mean = 1.17) (Appendix E, Table 6).

Some notable differences emerged between farmers and non-farmers in the importance of practice outcomes and effectiveness of conservation practices. Farmers placed greater importance on outcomes such as reducing nutrient loss from farm/property (Farmer mean = 1.54, Non-farmer mean = 1.18), increasing yield (Farmer mean = 1.21, Non-farmer mean = 0.24), maintaining the legacy of their farm (Farmer mean = 1.42, Non-farmer mean = 0.77), and freedom in making decisions on their land/farm (Farmer mean = 1.68, Non-farmer mean = 1.33). Non-farmers placed greater importance on improving wildlife habitat (Non-farmer mean = 1.73, Farmer mean = 1.18) than farmers (Appendix E, Table 7).

Farmers and non-farmers also differed in their perceived self-efficacy and collective efficacy to use conservation practices. Farmers believed to a greater extent that they are capable of using conservation practices such as filter strips (Farmer mean = 2.18, Non-farmer mean = 1.50), grassed waterways (Farmer mean = 2.22, Non-farmer mean = 1.75), alternative tile inlets (Farmer mean = 1.62, Non-farmer mean = 0.99), cover crops (Farmer mean = 1.86, Non-farmer mean = 1.06), and conservation tillage (Farmer mean = 2.00, Non-farmer mean = 0.96) than non-farmers. Non-farmers believed to a greater extent that other landowners and farmers are capable of using conservation practices including native grasses (Non-farmers mean = 2.26, Farmers mean = 1.88) and lakeshore restoration/stabilization than farmers (Non-farmers mean = 1.89, Farmers mean = 1.41) (Appendix E, Table 8).

There were significant differences between farmers and non-farmers in their likelihood of future action and willingness to pay for conservation practices. Non-farmers were more likely to recommend working with SWCD to other landowners (Non-farmers mean = 1.77, Farmers mean = 1.19) and talk to others about working with SWCD than farmers (Non-farmers mean = 1.62, Farmers mean = 1.00). Non-farmers (Mean = 0.55) also agreed to a greater extent that they are willing to contribute more toward maintaining conservation practices than farmers (Mean = 0.33) (Appendix E, Table 9).

Finally, farmers and non-farmers differed in their sense of personal responsibility and personal norms for water resource protection. Non-farmers agreed to a greater extent that it is their personal responsibility to help protect water resources (Non-farmers mean = 1.77, Farmers mean = 1.45), and make sure that what they do on their land does not contribute to water resource problems (Non-farmers mean = 1.85, Farmers mean = 1.53). Non-farmers also agreed to a greater extent that they feel a personal obligation to maintain their land/farm in a way that does not contribute to water resource problems (Non-farmers mean = 1.75, Farmers mean = 1.51), and protect water resources (Non-farmers mean = 1.79, Farmers mean = 1.56) (Appendix E, Table 10, Figure 8).

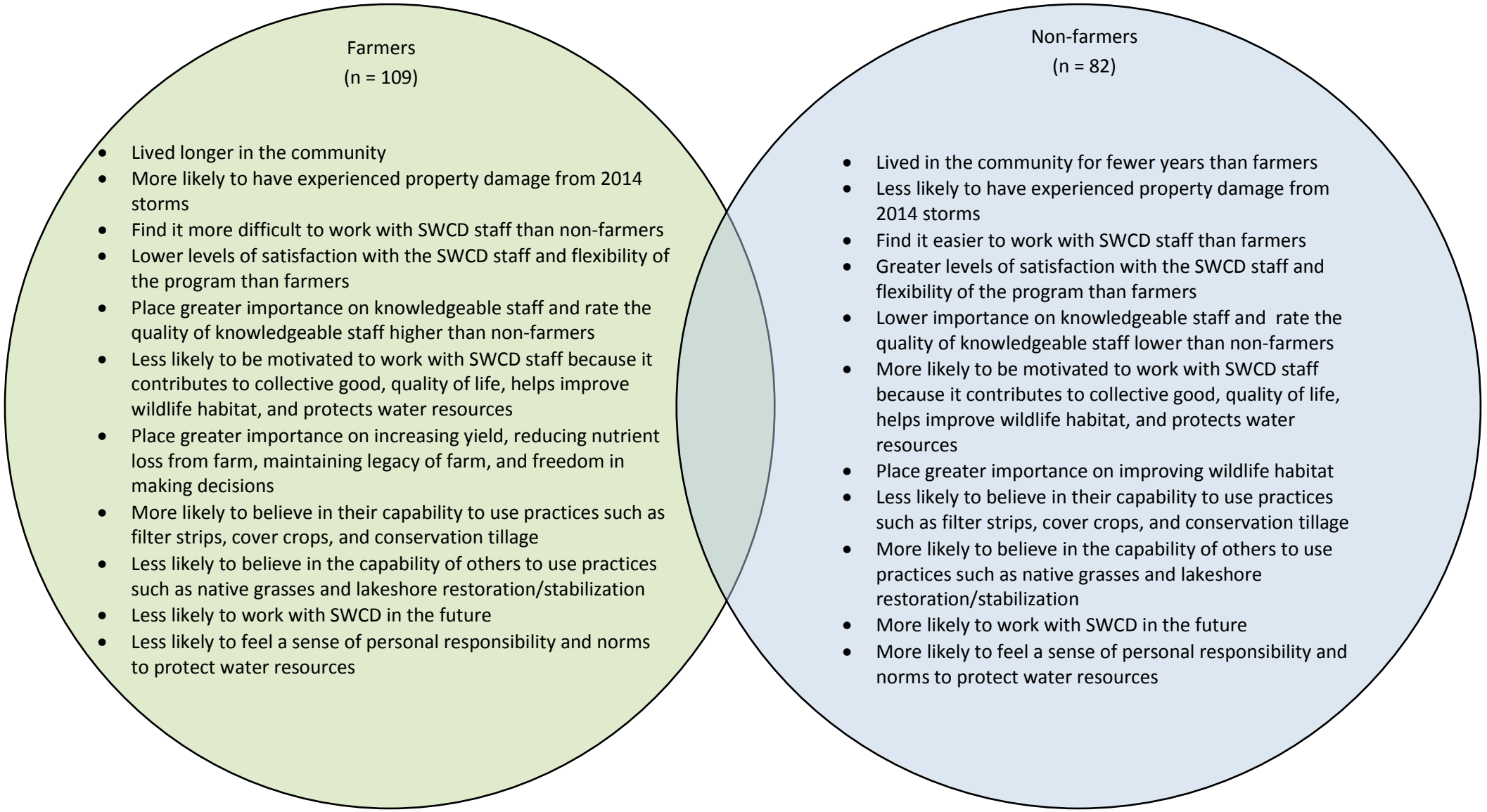

Figure 8. Differences between farmers and non-farmers

Discussion and Recommendations

This project's aim was to provide a social science-based evaluation of Scott County's Technical Assistance and Cost Share (TACS) program. Specifically, we documented program participants' perceptions of and experiences with the program, their motivations for program participation, and their perceptions of the practices implemented through the program. We believe the study findings will inform and enhance future water resource programming in Scott County, Minnesota. The following conclusions and recommendations are based on a synthesis of survey findings.

1. Continue to support the TACS program

Overall, most respondents were highly satisfied with the assistance they received from the SWCD staff. Most respondents were satisfied with the types of conservation practices available through the program, the amount of financial assistance offered, the timeliness of payments, and the opportunities to learn how to maintain conservation practices. Most respondents also seemed highly satisfied with the service provided by SWCD staff. An encouraging finding for water resource managers in the area is that most respondents are highly likely to work with SWCD staff in the future. However, there were important differences between farmers and non-farmers in their perceptions of the program. While satisfaction levels were generally high, farmers were less satisfied with SWCD staff than non-farmers. In particular, farmers were less satisfied with the flexibility of the program than non-farmers.

Survey findings indicate that the conservation assistance provided by SWCD staff increased participants' knowledge, sense of responsibility, and ability related to water resource conservation. Most respondents also reported that the assistance from SWCD staff inspired them to take conservation action (e.g., use conservation practices). Thus, resource managers in the area should continue to support and improve the TACS program. Survey respondents made some four key recommendations to improve the program: 1) provide frequent feedback to program participants, 2) raise awareness of the program, 3) reduce program complexity, and 4) improve customer service. Program participants recommended that staff communicate with them more frequently during the onset of a project and conduct more follow-ups and check-ins after practices have been installed. Program participants prefer one-on-one meetings and personal visits as a mode of communication. Resource managers should also reduce program complexity by streamlining the program and simplifying requirements. Providing more flexibility seems particularly important for farmers. Some strategies suggested by survey respondents were reducing contract length, and improving timeliness of payments. Finally, as the program grows, there may be a need to hire more staff to maintain strong one-on-one relationships with program participants.

2. Focus communication on environmental benefits of practices and appeal to participants' conservation ethic

Study findings suggest that respondents were motivated to work with SWCD staff because of the environmental benefits (e.g., controlling soil erosion, protecting water resources) of the program, their emotional connection to the land, and their conservation ethic. Most respondents placed a great deal of importance on environmental benefits of conservation practices such as reducing soil erosion and water runoff, protecting groundwater, and improving water quality and wildlife habitat. Most respondents are also aware of the connections between conservation practices and the environmental benefits they provide. Most respondents believed that conservation practices improve environmental conditions such as soil erosion, water runoff, wildlife habitat, and water quality. Respondents also believed that conservation practices are effective at providing environmental benefits.

Most respondents appear to be motivated by their emotional connection to the land and place a great deal of importance on values such as freedom in decision making, and maintaining the legacy of their farm. Respondents also believe that the use of conservation practices align with their values. Most respondents are also motivated by their conservation ethic. Doing the right thing, contributing to the collective good, and being part of a larger effort to protect water are important motivators for program participants. Further, an overwhelming majority of respondents feel a sense of personal obligation to protect water resources. Most respondents also see conservation as part of their self-identity. Again, survey respondents' motivators varied between subgroups of farmers and non-farmers. Non-farmers in particular are more likely to be motivated to participate in the program because of the environmental benefits of conservation practices, and their conservation ethic.

These findings suggest that communication and outreach campaigns that highlight the environmental benefits of conservation practices are likely to be successful. Programs should also appeal to the conservation ethic of landowners in the area. Norm-based strategies such as personal commitments, goal-setting, and benchmarking may be particularly effective (e.g., Abrahamse, Steg, Vlek, & Rothengatter, 2005; De Snoo, Lokhorst, Van Dijk, Staats, & Musters, 2010). Personal commitment (e.g., to participate in the TACS program) in the form of a written or verbal pledge can establish personal norms of conservation action. This strategy can be particularly useful if combined with goal-setting (e.g., I pledge to participate in the TACS program in the next 12 months to establish filter strips along the ditch on my land). Commitment is frequently used with benchmarking (i.e., tailored feedback) (e.g., De Snoo et al., 2010). Providing tailored feedback about farm conditions, local water quality, and the effectiveness of conservation practices can reinforce conservation as a community norm, and encourage landowners to use practices on their property.

One caveat to these recommendations, however, is the need to address the economics of conservation practices. While increasing yield was not a significant motivator for most respondents, the availability of financial incentive was an important motivator. A majority of respondents believed that they are receiving the right amount of financial assistance to install conservation practices and are willing to install practices again at the same level of financial assistance. Most respondents are also willing to contribute more toward maintaining conservation practices. Not surprisingly, respondents are more likely to install conservation

practices at higher levels of financial assistance. These findings suggest that financial incentives are an important driver of practice adoption. However, for most respondents, current levels of financial assistance may be adequate.

3. Address individual and community-level constraints to water resource conservation

The primary constraints to water resource conservation are lack of personal financial resources, equipment, community financial resources, and community leadership. A majority of respondents believe that it is their personal responsibility to protect water resources, and have the knowledge and skills to use conservation practices. However, they are constrained by the lack of financial resources and equipment. Further, study findings show that availability of financial incentives is an important motivator for most respondents. Programs such as Scott County's TACS program that provide financial assistance to landowners can help reduce the uncertainty and risk associated with adopting a new practice. Support is also needed in making equipment available through rental agreements or reduced rate trial periods.

Most respondents perceive that their community lacks the financial resources and leadership to address water issues. Leadership development programs, training, and information-exchange forums that bring landowners together may be useful strategies. Highlighting and promoting local success stories of water conservation can demonstrate to landowners that others in their community including farmers and local decision makers are taking actions to address water pollution. Conservation success stories, demonstration sites, and field days are also ways of highlighting the effectiveness of conservation practices in improving water resources.

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Appendices

Appendix A: Survey Questionnaire

ID# _____

Scott County Local Soil and Water Conservation District (SWCD) Conservation Assistance Survey

Department of FOREST RESOURCES
UNIVERSITY OF MINNESOTA

SCOTT Soil & Water CONSERVATION DISTRICT

Before you begin:
We are conducting this survey **to better understand your experience working with the Scott Soil & Water Conservation District (SWCD) office** and to improve conservation programming in Scott County. **This survey is voluntary and confidential.** It should take **about 20 minutes to complete** this questionnaire. Please answer the questions as completely as possible.

Once you've completed the survey:
Please fold it in thirds and mail it back in the enclosed self-addressed stamped envelope.

Thank you for your help!

I. Water

In this section, we ask specific questions about your perspectives on water.

1. How familiar are you with water resource issues in Scott County?

[ ] Not at all familiar [ ] Slightly familiar [ ] Moderately familiar [ ] Very familiar

2. How would you characterize the quality of water in the ditch, stream, lake, or river closest to you? *(Please check one box)*

[ ] Very poor [ ] Poor [ ] Fair [ ] Good [ ] Very good [ ] Don't know

3. How would you characterize the quality of surface water in Scott County? *(Please check one box)*

[ ] Very poor [ ] Poor [ ] Fair [ ] Good [ ] Very good [ ] Don't know

4. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. Water resources in Scott County are adequately protected	-2	-1	0	1	2
b. I believe it is important to protect water resources	-2	-1	0	1	2
c. Landowners in my community have the ability to work together to change land use practices	-2	-1	0	1	2
d. My community has the financial resources it needs to protect water resources	-2	-1	0	1	2
e. My community has the leadership it needs to protect water resources	-2	-1	0	1	2
f. I am confident that together we can solve the problem of water pollution	-2	-1	0	1	2
g. People who are important to me expect me to use conservation practices on my land	-2	-1	0	1	2
h. People who are important to me expect me to maintain my land/farm in a way that doesn't contribute to water resource problems	-2	-1	0	1	2
i. People who are important to me use conservation practices on their land	-2	-1	0	1	2
j. People who are important to me maintain their land/farm in a way that doesn't contribute to water resource problems	-2	-1	0	1	2
k. It is my personal responsibility to help protect water resources	-2	-1	0	1	2
l. It is my personal responsibility to make sure that what I do on my land does not contribute to water resource problems.	-2	-1	0	1	2

II. Scott County Local SWCD's Conservation Assistance

Next, we would like to know your thoughts on Scott County SWCD's assistance for your land.

5. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

I worked with SWCD staff on my land because…	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. it is the right thing to do	-2	-1	0	1	2
b. it contributes to the collective good	-2	-1	0	1	2
c. it helps protect water resources	-2	-1	0	1	2
d. it helps improve wildlife habitat	-2	-1	0	1	2
e. it helps control erosion	-2	-1	0	1	2
f. it contributes to quality of life in my community	-2	-1	0	1	2
g. it protects groundwater	-2	-1	0	1	2
h. the practice I installed increases yield	-2	-1	0	1	2
i. others recommended I work with SWCD staff	-2	-1	0	1	2
j. I received financial assistance to install practices	-2	-1	0	1	2
k. I feel conservation is a part of who I am	-2	-1	0	1	2
l. I am emotionally connected to my land	-2	-1	0	1	2
m. I enjoy doing it	-2	-1	0	1	2
n. it allows me to be part of a larger effort to protect water	-2	-1	0	1	2
o. people who are important to me expect me to protect water	-2	-1	0	1	2

6. How easy or difficult was it to work the SWCD staff? *(Please check one)*

[ ] Very easy [ ] Somewhat easy [ ] Neither easy nor difficult [ ] Somewhat difficult [ ] Very difficult

7. How helpful were the following aspects of the assistance from SWCD? *(Please circle one number for each row)*

	Not at all	Slightly	Moderately	Very
a. Planning/solution identification	0	1	2	3
b. Design and engineering	0	1	2	3
c. Staking/construction oversight	0	1	2	3
d. Financial assistance offered	0	1	2	3

8. How satisfied are you with the following? *(Please circle one number for each row)*

	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied
a. The types of conservation practices available to address my needs	-2	-1	0	1	2
b. The amount of financial assistance offered for the conservation practice(s) I installed	-2	-1	0	1	2
c. The amount of money I contributed toward using/maintaining the conservation practice	-2	-1	0	1	2
e. Flexibility of the program	-2	-1	0	1	2
f. The length of my contract (i.e., number of years)	-2	-1	0	1	2
g. Timeliness of payments/reimbursements	-2	-1	0	1	2
h. Opportunities to learn how to maintain conservation practices	-2	-1	0	1	2
i. Overall satisfaction with the SWCD staff	-2	-1	0	1	2

9. Please indicate the importance and quality of specific service characteristics of SWCD staff.

i. First, how <u>important</u> are the following service characteristics when working with SWCD staff?

ii. Second, how would you <u>rate the quality</u> of the service you received when you worked with SWCD staff?

	i) Importance of service characteristics					ii) Rating of service I received				
	Not at all	Somewhat	Moderately	Very	Extremely	Very poor	Poor	Fair	Good	Very good
a. Considerate of my business needs	0	1	2	3	4	-2	-1	0	1	2
b. Considerate of my property management needs	0	1	2	3	4	-2	-1	0	1	2
c. Responsive to my needs/interests	0	1	2	3	4	-2	-1	0	1	2
d. Polite/courteous	0	1	2	3	4	-2	-1	0	1	2
e. Knowledgeable	0	1	2	3	4	-2	-1	0	1	2
f. Trustworthy	0	1	2	3	4	-2	-1	0	1	2

10. How well informed were you by the staff about the conservation practices you installed? *(Please check one)*

[ ] Not at all informed [ ] Slightly informed [ ] Moderately informed [ ] Very informed

11. The amount of financial assistance you received from the program to install conservation practices was…
(Please check one)

[ ] Less than I needed [ ] About the right amount [ ] More than I needed

12. How likely or unlikely are you to take the following actions? *(Please circle one number for each row)*

	Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
a. Work with SWCD in the future	-2	-1	0	1	2
b. Recommend working with SWCD to other landowners	-2	-1	0	1	2
c. Talk to others about working with SWCD	-2	-1	0	1	2

13. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. I am willing to contribute more toward maintaining conservation practices	-2	-1	0	1	2
b. I am willing to use SWCD technical assistance and install conservation practices regardless of the amount of financial assistance I receive	-2	-1	0	1	2

14. At what level of financial assistance would you be willing to install conservation practices again? *(Please check one)*

[ ] At the same level I receive now [ ] Less than I receive now [ ] More than I receive now

15. How likely or unlikely would you be to install conservation practices again if provided the following levels of financial assistance (assuming you would still receive technical assistance)? *(Please circle one number for each row)*

Amount of financial assistance	Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
a. 0%	-2	-1	0	1	2
b. 25%	-2	-1	0	1	2
c. 50%	-2	-1	0	1	2
d. 75%	-2	-1	0	1	2
e. 90%	-2	-1	0	1	2

16. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

The assistance from SWCD staff...	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. is important to water conservation in Scott County	-2	-1	0	1	2
b. has increased my knowledge of conservation practices	-2	-1	0	1	2
c. has increased my knowledge of water resources	-2	-1	0	1	2
d. has increased my concern about water pollution	-2	-1	0	1	2
e. has increased my sense of responsibility to protect water	-2	-1	0	1	2
f. has increased my ability to protect water	-2	-1	0	1	2
g. has inspired me to use conservation practices in the future	-2	-1	0	1	2
h. has inspired me to talk to others about conservation	-2	-1	0	1	2
i. has inspired me to work with others to protect water	-2	-1	0	1	2

17. What practice(s) not currently offered through the SWCD office would you like to see made available in the future?

18. What recommendations do you have to improve your experience working with SWCD staff?

III. Perspectives on Conservation Practices

Next, we would like to know your thoughts on and uses of conservation practices.

19. Please indicate your current use of the following practices and the ease or difficulty of using the following practices.

i. First, to what extent do you currently use the following practices?
ii. Second, how easy or difficult is it to use the following practices?

	i) To what extent do you currently use the following practices?					ii) How easy or difficult is it to use the following practices?				
	Not at all	In one to a few locations	In about half of the possible locations	In most possible locations	In all possible locations	Very difficult	Somewhat difficult	Neither easy nor difficult	Somewhat easy	Very easy
a. Filter strips	0	1	2	3	4	-2	-1	0	1	2
b. Native grasses	0	1	2	3	4	-2	-1	0	1	2
c. Water and sediment control basins	0	1	2	3	4	-2	-1	0	1	2
d. Grassed waterways	0	1	2	3	4	-2	-1	0	1	2
e. Lakeshore restoration/stabilization	0	1	2	3	4	-2	-1	0	1	2
f. Streambank stabilization	0	1	2	3	4	-2	-1	0	1	2
g. Alternative tile inlets (e.g., rock inlets)	0	1	2	3	4	-2	-1	0	1	2
h. Cover crops	0	1	2	3	4	-2	-1	0	1	2
i. Conservation tillage	0	1	2	3	4	-2	-1	0	1	2

20. To what extent do you agree or disagree with the following statements? *(Please circle one number for each question)*

The practices I installed...	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. were compatible with my business plan	-2	-1	0	1	2
b. were the easiest practices for me to install	-2	-1	0	1	2
c. were the practices I had a lot of knowledge about	-2	-1	0	1	2

21. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

I feel a personal obligation to...	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. use conservation practices on my land	-2	-1	0	1	2
b. maintain my land/farm in a way that does not contribute to water resource problems	-2	-1	0	1	2
c. protect water resources	-2	-1	0	1	2

22. How important are the following to you? *(Please circle one number for each row)*

	Very unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important
a. Reducing soil erosion	-2	-1	0	1	2
b. Reducing water runoff	-2	-1	0	1	2
c. Improving wildlife habitat	-2	-1	0	1	2
d. Protecting groundwater	-2	-1	0	1	2
e. Improving water quality	-2	-1	0	1	2
f. Reducing nutrient loss from my farm/property	-2	-1	0	1	2
g. Increasing yield	-2	-1	0	1	2
h. Improving quality of life in my community	-2	-1	0	1	2
k. Maintaining the legacy of my farm	-2	-1	0	1	2
l. Maintaining my way of life	-2	-1	0	1	2
m. Freedom in making decisions on my land/farm	-2	-1	0	1	2

23. In your experience, how effective or ineffective were the practices you installed at the following? *(Please circle one number for each row)*

	Very ineffective	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Very effective
a. Reducing soil erosion	-2	-1	0	1	2
b. Reducing water runoff	-2	-1	0	1	2
c. Improving wildlife habitat	-2	-1	0	1	2
d. Protecting groundwater	-2	-1	0	1	2
e. Improving water quality	-2	-1	0	1	2
f. Reducing nutrient loss from my farm/property	-2	-1	0	1	2
g. Increasing yield	-2	-1	0	1	2
h. Improving quality of life in my community	-2	-1	0	1	2
k. Maintaining the legacy of my farm	-2	-1	0	1	2
l. Maintaining my way of life	-2	-1	0	1	2
m. Freedom in making decisions on my land/farm	-2	-1	0	1	2

24. To what extent do you intend to use the following practices on your land in the next 12 months? *(Please circle one number for each row)*

	Most certainly will not	Probably will not	Uncertain	Probably will	Most certainly will
a. Filter strips	-2	-1	0	1	2
b. Native grasses	-2	-1	0	1	2
c. Water and sediment control basins	-2	-1	0	1	2
d. Grassed waterways	-2	-1	0	1	2
e. Lakeshore restoration/stabilization	-2	-1	0	1	2
f. Streambank stabilization	-2	-1	0	1	2
g. Alternative tile inlets (e.g., rock inlets)	-2	-1	0	1	2
h. Cover crops	-2	-1	0	1	2
i. Conservation tillage	-2	-1	0	1	2

25. Do you believe that the use of conservation practices on your land will improve, worsen, or have no effect on the following conditions or values? *(Please circle one number for each row)*

	Worsen greatly	Worsen somewhat	Have no effect	Improve somewhat	Improve greatly
a. Soil erosion	-2	-1	0	1	2
b. Water runoff	-2	-1	0	1	2
c. Wildlife habitat	-2	-1	0	1	2
d. Groundwater	-2	-1	0	1	2
e. Water quality	-2	-1	0	1	2
f. Nutrient loss from my land/farm	-2	-1	0	1	2
g. Yield	-2	-1	0	1	2
i. Value of my land	-2	-1	0	1	2
j. Quality of life in my community	-2	-1	0	1	2
k. Maintain the legacy of my farm	-2	-1	0	1	2
l. My way of life	-2	-1	0	1	2
m. My freedom to make decisions on my land/farm	-2	-1	0	1	2

26. Please indicate the extent to which you believe you and other farmers/landowners are capable of using the following practices?

i. First, to what extent do you believe <u>you</u> are capable of using the following practices?

ii. Second, to what extent do you believe <u>other farmers/landowners</u> in your area are capable of using the following practices?

	i) To what extent do you believe <u>you</u> are capable of using the practice?				ii) To what extent do you believe <u>other farmers/landowners</u> are capable of using the practice?			
	Not at all capable	Slightly capable	Moderately capable	Very capable	Not at all capable	Slightly capable	Moderately capable	Very capable
a. Filter strips	0	1	2	3	0	1	2	3
b. Native grasses	0	1	2	3	0	1	2	3
c. Water and sediment control basins	0	1	2	3	0	1	2	3
d. Grassed waterways	0	1	2	3	0	1	2	3
e. Lakeshore restoration/stabilization	0	1	2	3	0	1	2	3
f. Streambank stabilization	0	1	2	3	0	1	2	3
g. Alternative tile inlets (e.g., rock inlets)	0	1	2	3	0	1	2	3
h. Cover crops	0	1	2	3	0	1	2	3
i. Conservation tillage	0	1	2	3	0	1	2	3

27. To what extent did the following factors *add to* or *detract from* your ability to use conservation practices in the last 12 months? *(Please circle one number for each row)*

	Detracted greatly	Detracted somewhat	Neither added nor detracted	Added somewhat	Added greatly
a. Farm insurance programs	-2	-1	0	1	2
b. High input prices	-2	-1	0	1	2
c. Cost of equipment	-2	-1	0	1	2
d. Cost of farm/land management	-2	-1	0	1	2
e. Competition among farmers	-2	-1	0	1	2
f. Markets for alternative crops (e.g., perennials)	-2	-1	0	1	2
g. Uncertainties in weather	-2	-1	0	1	2
h. Restrictions on use of property	-2	-1	0	1	2
i. Financial assistance	-2	-1	0	1	2
j. Regulations around conservation practices	-2	-1	0	1	2
k. Regulations around farming	-2	-1	0	1	2

28. To what extent do you agree or disagree with the following statements? *(Please circle one number for each row)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. I have the knowledge and skills I need to use conservation practices on the land	-2	-1	0	1	2
b. I have the financial resources I need to use conservation practices on the land.	-2	-1	0	1	2
c. I have the equipment I need to use conservation practice(s).	-2	-1	0	1	2

IV. Information about You and Your Land/Farm

Finally, we want to know a little bit about you in order to better understand who responded to this survey. Remember, your responses to all of the survey questions are confidential.

29. Approximately how many years have you lived in your current community? _____

30. Was your property damaged by the storms in 2014? *(Please check yes or no)*

[ ] Yes [ ] No *[if no, skip to question 31]*

30a. Have you repaired the damage to your property caused by the storms in 2014? *(Please check yes or no)*

[ ] Yes [ ] No

31. Do you use your land/property or rent land/property for agricultural production? *(Please check yes or no)*

[ ] Yes [ ] No

Q33a. How many acres are in agricultural production? _____ acres

32. Approximately what percentage of your income is dependent on agricultural production? _____%

33. Does the land you own or rent touch a ditch, stream, lake, or river? *(Please check yes or no)*

[ ] Yes [ ] No

34. Please characterize the ownership arrangement and size of your property. *(Please check all that apply and include acreage)*

Ownership	Approximate Acreage
[ ] I own and manage my own land.	_____
[ ] I rent land to another party.	_____
[ ] I rent land from another party.	_____
[ ] Other (please specify): _____	_____

35. Who makes the management decisions on the land? *(Please check one box)*

[ ] I make my own decisions.

[ ] I leave it up to my renter.

[ ] I leave it up to the landowner/property owner.

[ ] I work together with the renter/landowners to make decisions.

36. In what year were you born? _____

37. What is your gender? [ ] Male [ ] Female

38. What is the highest level of formal education you have completed? (Please check one box)

[ ] Did not finish high school
[ ] Completed high school
[ ] Some college but no degree
[ ] Associate degree or vocational degree
[ ] College bachelor's degree
[ ] Some college graduate work
[ ] Completed graduate degree (Masters or PhD)

39. Are you of Hispanic, Latino, or Spanish origin? (Please check yes or no)

[ ] Yes [ ] No

40. How would you describe your race? (Please check all that apply)

[ ] White
For example, German, Irish, English, Italian, Polish, French, etc.

[ ] Black or African American
For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.

[ ] Asian
For example, Chinese, Filipino, Asian Indian, Vietnamese, Hmong, Korean, Japanese, etc.

[ ] Some other race, ethnicity or heritage (Please specify):

_____

[ ] American Indian or Alaska Native
For example, Minnesota Chippewa Tribe, Shakopee Mdewakanton Sioux, Navajo Nation, Mayan, Aztec, Nome Eskimo Community, etc.

[ ] Middle Eastern or North African
For example, Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian etc.

[ ] Native Hawaiian or Other Pacific Islander
For example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.

41. Which of the following best describes your total household income from all sources before taxes in 2016?
(Please check one box)

[ ] Under $20,000
[ ] $20,000 - $49,999
[ ] $50,000 - $74,999
[ ] $75,000 - $99,999
[ ] $100,000 - $149,999
[ ] $150,000 - $199,999
[ ] $200,000 - $249,999
[ ] $250,000 - $299,999
[ ] $300,000 or more

42. Do you have any comments about your community or water resources?

Thank you for your help!

Please complete the survey, fold it in thirds, and mail it back in the enclosed self-addressed stamped envelope.

If you have questions please contact Dr. Amit Pradhananga, Department of Forest Resources, 115 Green Hall, 1530 Cleveland Avenue N., St. Paul, MN 55108. Phone: (612) 624-6726 or by email at prad0047@umn.edu.

Appendix B: Cover Letter

[Date]

[First Name] [Last Name]
[Street Address]
[City] [State] [Zip code]

Scott County Local Soil and Water Conservation District (SWCD) Conservation Assistance Survey Information and Consent Form

Dear [First Name] [Last Name],

I am writing to ask for your help in a study about your experience working with the Scott County Soil and Water Conservation District (SWCD) office. The study is being conducted by Amit Pradhananga, Department of Forest Resources, University of Minnesota in partnership with Scott County Watershed Management Organization. I am contacting you because you have worked with SWCD staff in the past to install conservation practices on your property, and we believe you have an important perspective to share on the future of your community and its water resources.

The findings from this study will be used to help resource managers and community leaders better understand landowners' views and to improve conservation programming in Scott County. Your input will inform water and land management decisions in Scott County. We really appreciate you taking the time to help us with this study. It should take you only about 20 minutes to complete the questionnaire.

This survey is voluntary and completely confidential. The risks of participating in this study are minimal. There are no direct benefits to you for participating in this study. You are free to withdraw at any time. Completion of this survey indicates your voluntary consent to participate. Your decision to participate will not affect your current or future relationship with the University of Minnesota. The ID # on the front page of your survey is used to help us track mailings and will ensure that your name is never affiliated with your responses. Please answer the questions as completely as possible. Once you have **completed the questionnaire, fold it in thirds and mail it back in the enclosed self-addressed, postage-paid envelope.**

We would be happy to answer any questions or listen to any comments you may have about this study. Please feel free to contact me by phone at 612-624-6726, or by email at prad0047@umn.edu.

I hope you enjoy completing the questionnaire and I look forward to receiving your response.

Sincerely,

Amit Pradhananga
Research Associate

Appendix C: Reminder Letter

[Date]June 29, 2017

[First Name] [Last Name]
[Street Address]
[City] [State] [Zip code]

Dear [First Name] [Last Name],

A few weeks ago I sent you a questionnaire that asked about your experience working with the Scott County Soil and Water Conservation District (SWCD) office. If you have already returned your questionnaire, thank you for your response. We sincerely appreciate your input!

If you have not yet responded, I am writing again because of the importance of your participation to the study and its intended outcomes. It should take you only about 20 minutes to complete the questionnaire. We want to ensure that your opinions are represented, too!

The study is being conducted by Amit Pradhananga, Department of Forest Resources, University of Minnesota in partnership with Scott County Watershed Management Organization. Your input will inform water and land management decisions in Scott County. We really appreciate you taking the time to help us with this study.

This survey is voluntary and completely confidential. The ID # on the front page of your survey is used to help us track mailings and will ensure that your name is never affiliated with your responses. Please answer the questions as completely as possible. Once you have **completed the questionnaire, fold it in thirds and mail it back in the enclosed self-addressed, postage-paid envelope.**

We would be happy to answer any questions or listen to any comments you may have about this study. Please feel free to contact me by phone at 612-624-6726, or by email at prad0047@umn.edu.

I hope you enjoy completing the questionnaire and I look forward to receiving your response.

Sincerely,

Amit Pradhananga
Research Associate

Appendix D: Study Findings- Descriptive Statistics

Table 1. Respondents' ease or difficulty in working with SWCD staff

Response	N	Percent	Mean*
Very easy	115	63.2	1.67
Somewhat easy	35	19.2	
Neither easy nor difficult	15	8.2	
Somewhat difficult	12	6.6	
Very difficult	5	2.7	
Total	182	100.0	

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 6
*Responses based on a 5-point scale from very easy (1) to very difficult (5)

Table 2. Respondents' perceptions about the helpfulness of the following aspects of SWCD assistance

	N	Mean*	SD[a]	Not at all[b]	Slightly	Moderately	Very
Planning/solution identification	191	2.49	0.77	2.6	8.9	25.1	63.4
Design and engineering	188	2.39	0.84	3.7	11.7	26.6	58.0
Financial assistance offered	191	2.31	0.90	5.8	12.6	26.2	55.5
Staking/construction oversight	185	2.27	0.96	7.6	13.0	24.3	55.1

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 7
*Responses based on a 4-point scale from not at all (0) to very (3)
[a] SD=Standard deviation
[b] Percent

Table 3. Respondents' perception about how well informed they were by SWCD staff about the conservation practices they installed

Response	N	Percent	Mean*
Not at all informed	3	2.0	2.54
Slightly informed	11	7.5	
Moderately informed	36	24.5	
Very informed	97	66.0	
Total	147	100.0	

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 10
*Responses based on a 4-point scale from not at all informed (0) to very informed (3)

Table 4. Respondents' satisfaction with aspects of conservation assistance

	N	Mean*	SD [a]	Very dissatisfied [b]	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied
Overall satisfaction with the SWCD staff	192	1.48	0.91	2.6	3.1	3.6	24.5	66.1
Timeliness of payments/reimbursements	191	1.26	0.94	1.6	2.1	18.3	24.6	53.4
The types of conservation practices available to address my needs	194	1.13	0.97	3.1	4.1	9.8	42.8	40.2
The amount of financial assistance offered for the conservation practice(s) I installed	192	1.07	1.07	4.2	5.2	13.0	34.4	43.2
Opportunities to learn how to maintain conservation practices	188	0.95	0.97	2.7	4.3	20.2	41.0	31.9
The amount of money I contributed toward using/maintaining the conservation practice	191	0.87	1.01	2.1	7.9	22.0	37.2	30.9
The length of my contract (i.e., number of years)	188	0.74	1.01	1.6	9.0	30.9	30.9	27.7
Flexibility of the program	191	0.66	1.08	4.7	8.9	25.7	37.2	23.6

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 8

*Responses based on a 5-point scale from very dissatisfied (-2) to very satisfied (+2)

[a] SD=Standard deviation

[b] Percent

Table 5. Respondents' perceived importance of service characteristics when working with SWCD staff

	N	Mean*	SD[a]	Not at all[b]	Somewhat	Moderately	Very	Extremely
Polite/courteous	190	3.49	0.71	0.0	2.1	6.3	32.1	59.5
Trustworthy	191	3.47	0.79	0.5	3.7	4.2	31.4	60.2
Knowledgeable	191	3.38	0.84	1.0	3.7	6.3	34.0	55.0
Responsive to my needs/interests	192	2.95	1.03	4.7	4.7	13.5	44.8	32.3
Considerate of my property management needs	190	2.95	1.02	4.2	4.2	16.3	42.6	32.6
Considerate of my business needs	185	2.68	1.12	6.5	8.1	21.1	40.0	24.3

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 9

*Responses based on a 5-point scale from not at all (0) to extremely (4)

[a] SD=Standard deviation

[b] Percent

Table 6. Respondents' rating of service characteristics when working with SWCD staff

	N	Mean*	SD[a]	Very poor[b]	Poor	Fair	Good	Very good
Polite/courteous	188	1.71	0.57	0.0	0.5	4.3	18.6	76.6
Trustworthy	189	1.57	0.76	1.1	1.6	5.3	23.8	68.3
Knowledgeable	189	1.54	0.74	1.1	1.1	5.3	28.0	64.6
Responsive to my needs/interests	189	1.32	0.90	2.1	3.2	6.9	36.5	51.3
Considerate of my property management needs	186	1.32	0.85	1.1	2.7	10.8	34.4	51.1
Considerate of my business needs	178	1.29	0.80	0.6	2.8	10.1	40.4	46.1

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 9

*Responses based on a 5-point scale from very poor (-2) to very good (+2)

[a] SD=Standard deviation

[b] Percent

Table 7. Respondents' beliefs about assistance from SWCD staff

The assistance from SWCD staff…	N	Mean*	SD [a]	Strongly disagree [b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
is important to water conservation in Scott County	197	1.59	0.75	1.5	1.0	3.6	24.9	69.0
has increased my knowledge of conservation practices	196	1.28	0.89	2.0	2.6	9.7	37.2	48.5
has increased my ability to protect water	197	1.19	0.91	2.0	3.6	11.2	40.1	43.1
has increased my knowledge of water resources	197	1.11	0.96	2.5	2.5	17.8	36.0	41.1
has inspired me to use conservation practices in the future	196	1.10	1.00	4.1	1.0	17.3	36.2	41.3
has increased my sense of responsibility to protect water	197	1.09	1.00	3.6	2.0	18.3	34.5	41.6
has increased my concern about water pollution	197	0.99	0.96	2.5	3.0	22.3	37.1	35.0
has inspired me to talk to others about conservation	196	0.89	1.00	3.1	2.0	31.1	30.1	33.7
has inspired me to work with others to protect water	195	0.83	0.98	2.6	3.6	31.8	32.8	29.2

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 16

*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)

[a] SD=Standard deviation

[b] Percent

Table 8. Respondents' motivations for working with SWCD staff to install conservation practices

I worked with SWCD staff on my land because…	N	Mean*	SD[a]	Strongly disagree[b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
it helps control erosion	194	1.66	0.70	1.0	0.5	5.2	18.0	75.3
it helps protect water resources	194	1.62	0.68	1.0	0.5	3.6	25.3	69.6
I am emotionally connected to my land	194	1.56	0.73	0.0	1.0	10.8	19.6	68.6
it protects groundwater	194	1.54	0.76	1.0	1.5	5.7	25.8	66.0
it helps improve wildlife habitat	195	1.52	0.81	1.5	1.0	7.7	23.6	66.2
it is the right thing to do	195	1.51	0.74	1.0	0.5	7.2	29.2	62.1
it contributes to the collective good	195	1.49	0.76	1.5	0.0	6.7	31.3	60.5
I feel conservation is a part of who I am	193	1.48	0.73	0.5	1.0	7.8	31.1	59.6
it allows me to be part of a larger effort to protect water	195	1.48	0.74	1.0	0.5	7.2	32.3	59.0
I enjoy doing it	193	1.45	0.82	1.6	0.5	10.4	26.4	61.1
it contributes to quality of life in my community	195	1.33	0.85	1.0	1.0	15.9	28.2	53.8
people who are important to me expect me to protect water	195	1.23	0.94	2.6	1.5	15.4	31.3	49.2
I received financial assistance to install practices	192	1.20	1.08	5.7	2.6	8.3	32.8	50.5
others recommended I work with SWCD staff	191	0.60	1.01	2.6	6.3	44.5	22.0	24.6
the practice I installed increases yield	192	0.34	1.14	8.3	7.3	46.9	16.7	20.8

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 5

*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)

[a] SD=Standard deviation

[b] Percent

Table 9. Respondents' perception about the amount of financial assistance they received from the program to install conservation practices

Response	N	Percent
Less than I needed	44	24.0
About the right amount	135	73.8
More than I needed	4	2.2
Total	183	100.0

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 11

Table 10. Respondents' perception about the level of financial assistance at which they would be willing to install conservation practices again

Response	N	Percent
At the same level I receive now	119	63.0
Less than I receive now	10	5.3
More than I receive now	60	31.7
Total	189	100.0

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 14

Table 11. Respondents' likelihood of installing conservation practices at various levels of financial assistance

	N	Mean*	SD[a]	Very unlikely[b]	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
90%	186	1.74	0.62	0.5	0.0	6.5	11.3	81.7
75%	184	1.13	0.97	3.3	3.8	10.3	42.4	40.2
50%	184	0.26	1.27	13.6	14.1	20.7	36.4	15.2
25%	182	-0.51	1.24	28.6	23.6	23.6	18.7	5.5
0%	184	-0.73	1.27	40.8	16.3	23.9	13.6	5.4

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 15
*Responses based on a 5-point scale from very unlikely (-2) to very likely (+2)
[a] SD=Standard deviation
[b] Percent

Table 12. Respondents' willingness to pay for conservation practices

	N	Mean*	SD[a]	Strongly disagree[b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am willing to contribute more toward maintaining conservation practices	195	0.73	0.92	3.6	3.1	28.2	47.2	17.9
I am willing to use SWCD technical assistance and install conservation practices regardless of the amount of financial assistance I receive	196	0.43	1.12	6.1	14.8	26.0	36.2	16.8

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 13
*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)
[a] SD=Standard deviation
[b] Percent

Table 13. Respondents' perceptions about the ease or difficulty of using conservation practices

	N	Mean*	SD[a]	Very difficult[b]	Somewhat difficult	Neither easy nor difficult	Somewhat easy	Very easy
Native grasses	150	0.65	1.21	5.3	13.3	24.0	25.3	32.0
Filter strips	143	0.61	1.13	4.2	12.6	27.3	30.1	25.9
Grassed waterways	133	0.59	1.09	3.0	14.3	27.8	30.8	24.1
Conservation tillage	123	0.51	1.24	10.6	4.9	35.0	22.0	27.6
Water and sediment control basins	137	0.28	1.25	11.7	10.9	35.8	20.4	21.2
Cover crops	119	0.24	1.16	9.2	12.6	40.3	20.2	17.6
Alternative tile inlets (e.g., rock inlets)	118	0.19	1.10	10.2	9.3	44.9	22.9	12.7
Streambank stabilization	121	0.06	1.23	14.0	15.7	35.5	19.8	14.9
Lakeshore restoration/stabilization	104	0.04	1.24	18.3	4.8	46.2	16.3	14.4

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 19

*Responses based on a 5-point scale from very difficult (-2) to very easy (+2)

[a] SD=Standard deviation

[b] Percent

Table 14. Respondents' beliefs about the conservation practices they installed

The practices I installed…	N	Mean*	SD[a]	Strongly disagree[b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
were compatible with my business plan	182	0.82	0.97	2.2	3.3	34.1	30.8	29.7
were the easiest practices for me to install	186	0.75	1.04	2.2	10.8	24.2	35.5	27.4
were the practices I had a lot of knowledge about	184	0.63	0.96	2.2	9.2	31.0	39.1	18.5

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 20

*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)

[a] SD=Standard deviation

[b] Percent

Table 15. Respondents' perceived importance of the outcomes of conservation practices

	N	Mean*	SD [a]	Very unimportant [b]	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Very important
Reducing soil erosion	193	1.72	0.66	1.0	1.0	2.1	17.1	78.8
Protecting groundwater	193	1.68	0.71	1.6	1.0	1.6	19.2	76.7
Improving water quality	194	1.68	0.70	1.5	1.0	1.0	21.1	75.3
Reducing water runoff	192	1.60	0.71	1.0	1.6	2.1	27.1	68.2
Freedom in making decisions on my land/farm	192	1.53	0.89	3.1	0.5	6.8	19.3	70.3
Maintaining my way of life	189	1.45	0.89	2.6	0.5	9.5	23.8	63.5
Improving wildlife habitat	193	1.42	0.97	3.1	3.1	6.2	23.8	63.7
Reducing nutrient loss from my farm/property	191	1.38	0.91	1.6	2.6	12.0	23.6	60.2
Improving quality of life in my community	191	1.34	0.83	0.5	2.6	12.0	31.9	52.9
Maintaining the legacy of my farm	185	1.15	1.11	4.3	2.2	22.2	16.8	54.6
Increasing yield	184	0.80	1.22	7.1	3.8	31.5	16.8	40.8

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 22

*Responses based on a 5-point scale from very unimportant (-2) to very important (+2)

[a] SD=Standard deviation

[b] Percent

Table 16. Respondents' perceptions about the effectiveness of conservation practices

	N	Mean*	SD [a]	Very ineffective [b]	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Very effective
Reducing soil erosion	191	1.30	0.87	2.1	1.6	9.9	37.2	49.2
Reducing water runoff	190	1.29	0.81	1.6	0.5	11.6	39.5	46.8
Protecting groundwater	189	1.26	0.82	1.1	0.5	15.9	36.5	46.0
Improving water quality	188	1.24	0.83	1.6	0.5	14.4	39.4	44.1
Improving wildlife habitat	189	1.15	0.89	1.6	0.5	21.7	33.3	42.9
Freedom in making decisions on my land/farm	185	1.04	1.03	3.8	3.2	18.4	34.1	40.5
Maintaining my way of life	185	0.98	0.89	1.6	1.1	27.6	36.8	33.0
Reducing nutrient loss from my farm/property	185	0.96	0.99	3.2	0.5	29.7	30.3	36.2
Improving quality of life in my community	185	0.81	0.88	1.6	0.5	38.9	33.5	25.4
Maintaining the legacy of my farm	180	0.78	0.98	3.3	0.6	38.9	28.9	28.3
Increasing yield	180	0.43	1.00	5.6	2.8	52.8	20.6	18.3

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 23

*Responses based on a 5-point scale from very ineffective (-2) to very effective (+2)

[a] SD=Standard deviation

[b] Percent

Table 17. Respondents' beliefs about the effects of using conservation practices

	N	Mean*	SD[a]	Worsen greatly[b]	Worsen somewhat	Have no effect	Improve somewhat	Improve greatly
Soil erosion	192	1.28	0.70	0.5	0.5	9.9	49.0	40.1
Water runoff	192	1.25	0.73	0.5	0.5	12.5	46.4	40.1
Wildlife habitat	189	1.15	0.78	0.5	0.0	20.6	41.3	37.6
Water quality	189	1.14	0.71	0.5	0.0	15.9	51.9	31.7
Groundwater	192	1.12	0.72	0.5	0.0	17.7	50.5	31.3
Nutrient loss from my land/farm	183	0.95	0.89	2.2	0.0	29.5	37.7	30.6
My way of life	188	0.94	0.85	1.6	0.0	29.8	39.9	28.7
My freedom to make decisions on my land/farm	188	0.90	1.05	3.7	4.8	22.9	34.6	34.0
Maintain the legacy of my farm	183	0.84	0.91	2.2	0.0	37.2	32.8	27.9
Quality of life in my community	190	0.83	0.85	1.6	0.5	34.7	40.0	23.2
Value of my land	188	0.78	0.89	2.1	2.1	33.5	40.4	21.8
Yield	179	0.46	0.91	3.4	2.8	54.2	24.0	15.6

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 25
*Responses based on a 5-point scale from worsen greatly (-2) to improve greatly (+2)
[a] SD=Standard deviation
[b] Percent

Table 18. Respondents' perceived ability to use conservation practices

	N	Mean*	SD[a]	Strongly disagree[b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I have the knowledge and skills I need to use conservation practices on the land	186	0.94	0.92	3.8	4.3	10.2	58.1	23.7
I have the financial resources I need to use conservation practices on the land.	185	0.34	1.13	8.6	13.0	28.1	36.8	13.5
I have the equipment I need to use conservation practice(s).	184	-0.01	1.20	15.2	17.9	28.3	29.9	8.7

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 28
*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)
[a] SD=Standard deviation
[b] Percent

Table 19. Respondents' perceptions about their capability to use conservation practices

	N	Mean*	SD[a]	Not at all capable[b]	Slightly capable	Moderately capable	Very capable
Native grasses	175	2.25	0.92	6.9	12.6	29.7	50.9
Grassed waterways	171	2.01	1.10	15.2	14.0	25.7	45.0
Filter strips	173	1.90	1.14	19.1	13.3	26.6	41.0
Water and sediment control basins	172	1.77	1.14	19.8	19.2	25.0	36.0
Conservation tillage	170	1.55	1.19	29.4	14.7	27.6	28.2
Cover crops	170	1.51	1.12	26.5	18.8	31.8	22.9
Alternative tile inlets (e.g., rock inlets)	170	1.35	1.18	35.9	15.3	27.1	21.8
Streambank stabilization	174	1.34	1.20	37.4	13.8	25.9	23.0
Lakeshore restoration/stabilization	165	1.00	1.23	55.8	7.9	17.0	19.4

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 26

*Responses based on a 4-point scale from not at all capable (0) to very capable (3)

[a] SD=Standard deviation

[b] Percent

Table 20. Respondents' perceptions about others' capability to use conservation practices

	N	Mean*	SD[a]	Not at all capable[b]	Slightly capable	Moderately capable	Very capable
Filter strips	157	2.10	0.84	5.1	15.3	44.6	35.0
Conservation tillage	155	2.09	0.87	4.5	20.0	37.4	38.1
Grassed waterways	157	2.08	0.86	4.5	19.7	38.9	36.9
Native grasses	159	2.04	0.90	5.7	20.8	37.1	36.5
Cover crops	157	1.93	0.90	7.6	21.0	42.0	29.3
Water and sediment control basins	158	1.92	0.85	3.8	28.5	39.2	28.5
Alternative tile inlets (e.g., rock inlets)	155	1.84	0.89	7.1	27.7	39.4	25.8
Streambank stabilization	158	1.82	0.95	10.8	23.4	38.6	27.2
Lakeshore restoration/stabilization	155	1.61	1.04	18.1	27.1	31.0	23.9

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 26

*Responses based on a 4-point scale from not at all capable (0) to very capable (3)

[a] SD=Standard deviation

[b] Percent

Table 21. Respondents' perceptions about the factors that add to or detract from their ability to use conservation practices

	N	Mean*	SD[a]	Detracted greatly[b]	Detracted somewhat	Neither added nor detracted	Added somewhat	Added greatly
Financial assistance	171	0.38	1.07	5.8	9.4	43.9	22.8	18.1
Farm insurance programs	171	0.08	0.45	0.6	1.8	89.5	5.3	2.9
Regulations around conservation practices	171	0.04	0.91	7.6	10.5	58.5	17.5	5.8
Regulations around farming	169	0.02	0.82	6.5	8.3	65.7	15.4	4.1
Uncertainties in weather	169	0.02	0.78	4.1	11.2	68.6	10.7	5.3
High input prices	170	0.02	0.77	5.3	8.2	70.0	12.4	4.1
Competition among farmers	169	0.01	0.65	4.1	5.9	77.5	10.1	2.4
Cost of farm/land management	170	-0.01	0.84	5.3	14.1	62.9	11.8	5.9
Cost of equipment	169	-0.04	0.74	4.1	14.2	66.3	12.4	3.0
Markets for alternative crops (e.g., perennials)	170	-0.09	0.64	5.9	6.5	80.0	6.5	1.2
Restrictions on use of property	171	-0.13	0.88	8.8	15.8	59.6	11.7	4.1

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 27

*Responses based on a 5-point scale from detracted greatly (-2) to added greatly (+2)

[a] SD=Standard deviation

[b] Percent

Table 22. Respondents' current use of conservation practices

	N	Mean*	SD[a]	Not at all[b]	In one to a few locations	In about half of the possible locations	In most possible locations	In all possible locations
Native grasses	183	2.11	1.50	22.4	16.9	10.4	27.9	22.4
Filter strips	178	2.10	1.67	32.6	7.9	4.5	27.0	28.1
Grassed waterways	178	1.80	1.57	33.1	15.7	7.9	24.2	19.1
Water and sediment control basins	173	1.45	1.59	45.7	15.0	4.6	17.9	16.8
Conservation tillage	173	1.43	1.60	49.1	8.7	8.1	18.5	15.6
Streambank stabilization	174	1.20	1.57	57.5	8.6	4.0	16.1	13.8
Cover crops	174	1.17	1.51	55.2	11.5	5.7	16.1	11.5
Alternative tile inlets (e.g., rock inlets)	171	0.99	1.40	59.6	11.7	5.8	15.2	7.6
Lakeshore restoration/stabilization	162	0.85	1.52	74.7	.6	3.1	8.0	13.6

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 19

*Responses based on a 5-point scale from not at all (0) to in all possible locations (4)

[a] SD=Standard deviation

[b] Percent

Table 23. Respondents' intentions to use conservation practices in the next 12 months

	N	Mean*	SD[a]	Most certainly will not[b]	Probably will not	Uncertain	Probably will	Most certainly will
Native grasses	185	0.83	1.27	6.5	9.7	21.6	18.4	43.8
Grassed waterways	181	0.51	1.32	10.5	11.6	25.4	21.0	31.5
Filter strips	180	0.47	1.45	12.8	16.7	18.9	13.9	37.8
Conservation tillage	175	0.20	1.38	18.9	7.4	31.4	19.4	22.9
Water and sediment control basins	178	0.19	1.32	12.4	18.5	30.3	15.7	23.0
Cover crops	175	0.05	1.28	18.3	10.3	33.7	23.4	14.3
Streambank stabilization	174	-0.15	1.38	24.7	13.2	29.9	16.7	15.5
Alternative tile inlets (e.g., rock inlets)	173	-0.28	1.25	23.7	13.3	40.5	12.1	10.4
Lakeshore restoration/stabilization	167	-0.49	1.29	32.3	12.6	36.5	9.0	9.6

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 24
*Responses based on a 5-point scale from most certainly will not (-2) to most certainly will (+2)
[a] SD=Standard deviation
[b] Percent

Table 24. Respondents' likelihood of taking actions with SWCD

	N	Mean*	SD[a]	Very unlikely[b]	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
Work with SWCD in the future	196	1.44	0.92	3.1	2.0	5.1	27.0	62.8
Recommend working with SWCD to other landowners	196	1.44	0.98	3.1	3.1	7.7	19.4	66.8
Talk to others about working with SWCD	196	1.27	0.99	3.1	2.6	12.8	27.6	54.1

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 12
*Responses based on a 5-point scale from very unlikely (-2) to very likely (+2)
[a] SD=Standard deviation
[b] Percent

Table 25. Respondents' familiarity with water resource issues in Scott County

Response	N	Percent
Not at all familiar	16	8.4
Slightly familiar	62	32.6
Moderately familiar	87	45.8
Very familiar	25	13.2
Total	190	100.0

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 1

Table 26. Respondents' perceptions about water quality in the stream, lake, or river closest to them and in Scott County

	N	Mean*	SD[a]	Very poor[b]	Poor	Fair	Good	Very good	Don't know
Water quality in ditch, stream, lake, or river closest to them	174	3.53	0.89	1.6	7.8	33.9	35.4	12.0	9.4
Water quality in Scott County	162	3.46	0.79	1.0	6.8	34.4	36.5	5.7	15.6

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Questions 2 and 3

*Responses based on a 5-point scale from very poor (1) to very good (5)

[a] SD=Standard deviation

[b] Percent

Table 27. Respondents' beliefs about water resource protection

	N	Mean*	SD[a]	Strongly disagree[b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I believe it is important to protect water resources	191	1.77	0.56	1.0	0.0	0.5	17.3	81.2
It is my personal responsibility to make sure that what I do on my land does not contribute to water resource problems.	193	1.68	0.58	0.5	0.0	2.6	24.9	72.0
It is my personal responsibility to help protect water resources	193	1.59	0.61	0.0	.5	4.7	30.1	64.8
People who are important to me expect me to maintain my land/farm in a way that doesn't contribute to water resource problems	193	1.19	0.91	2.1	2.6	13.5	38.3	43.5
People who are important to me expect me to use conservation practices on my land	192	1.09	0.86	1.0	2.6	18.8	41.1	36.5
Landowners in my community have the ability to work together to change land use practices	191	0.92	0.95	2.1	5.8	19.4	44.0	28.8
I am confident that together we can solve the problem of water pollution	193	0.90	0.99	2.1	10.4	10.4	49.7	27.5
People who are important to me use conservation practices on their land	191	0.77	0.90	1.0	6.8	27.7	42.9	21.5
People who are important to me maintain their land/farm in a way that doesn't contribute to water resource problems	192	0.71	0.96	1.6	10.9	22.4	44.8	20.3
My community has the leadership it needs to protect water resources	191	0.48	1.04	4.2	12.0	31.9	35.6	16.2
Water resources in Scott County are adequately protected	192	0.43	1.03	7.3	10.4	22.9	51.0	8.3
My community has the financial resources it needs to protect water resources	192	0.37	0.99	3.1	14.1	39.1	30.2	13.5

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 4

*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)

[a] SD=Standard deviation

[b] Percent

Table 28. Respondents' feelings of personal obligation to protect water resources

I feel a personal obligation to…	N	Mean*	SD [a]	Strongly disagree [b]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
protect water resources	192	1.67	0.53	0.0	0.0	3.1	27.1	69.8
maintain my land/farm in a way that does not contribute to water resource problems	192	1.62	0.60	0.0	1.0	3.1	28.6	67.2
use conservation practices on my land	191	1.41	0.73	0.0	1.6	9.9	34.0	54.5

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 21

*Responses based on a 5-point scale from strongly disagree (-2) to strongly agree (+2)

[a] SD=Standard deviation

[b] Percent

Appendix E: Study Findings- Subgroup Comparisons

Table 1. Number of respondents that use their land for agricultural production

	N	Percent
Farmer	109	57.1
Non-farmer	82	42.9
Total	191	100.0

Source: Scott County Local Soil and Water Conservation District Conservation Assistance Survey, Question 31

Table 2. Difference between farmers and non-farmers in the number of years lived in the community

	Respondent type	N	Mean	SD	t[a]
Years lived in community	Farmer	107	48.0	22.2	6.117
	Non-farmer	82	28.6	20.6	

[a]T-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here.
SD = Standard deviation

Table 3. Difference between farmers and non-farmers in property damage by 2014 storms

	Property damaged in 2014 storms (%)	χ^2
Farmers	47.2	10.018
Non-farmers	24.7	

χ^2 Chi-square statistic for testing differences in proportions; $p \leq 0.01$

Table 4. Differences between farmers and non-farmers in the ease or difficulty of working with SWCD staff

Survey item[a]	Respondent type	N	Mean	SD	t[b]
Ease or difficulty of working with SWCD staff	Farmer	98	1.90	1.21	3.660
	Non-farmer	79	1.34	0.68	

[a]Items measured on a five-point scale from very easy (1) to very difficult (5)
[b]T-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here.

Table 5. Difference between farmers and non-farmers in their program satisfaction, and importance and rating of service characteristics

Survey item	Respondent type	N	Mean	SD	t[d]
Satisfaction with the program[a]					
Overall satisfaction with the SWCD staff	Farmer	106	1.31	1.06	-2.860
	Non-farmer	81	1.69	0.63	
Flexibility of the program	Farmer	105	0.46	1.09	-2.999
	Non-farmer	81	0.93	1.01	
Importance of service characteristics[b]					
Knowledgeable	Farmer	105	3.41	0.81	-3.262
	Non-farmer	79	3.61	0.56	
Rating of service received[c]					
Knowledgeable	Farmer	102	1.40	0.77	-3.035
	Non-farmer	81	1.73	0.65	

[a]Items measured on a five-point scale from very dissatisfied (-2) to very satisfied (+2)
[b]Item measured on a five-point scale from not at all (0) to extremely (4)
[c]Item measured on a five-point scale from very poor (-2) to very good (+2)
[d]T-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here
SD = Standard deviation

Table 6. Difference between farmers and non-farmers in their motivations for working with SWCD staff

Survey item[a]	Respondent type	N	Mean	SD	t[b]
I worked with SWCD staff on my land because…					
it contributes to the collective good	Farmer	107	1.32	0.88	-3.472
	Non-farmer	82	1.70	0.51	
it helps protect water resources	Farmer	107	1.48	0.79	-3.030
	Non-farmer	81	1.78	0.47	
it helps improve wildlife habitat	Farmer	107	1.31	0.95	-3.874
	Non-farmer	82	1.76	0.51	
it contributes to quality of life in my community	Farmer	107	1.17	0.94	-2.676
	Non-farmer	82	1.50	0.71	

[a]Items measured on a five-point scale from strongly disagree (-2) to strongly agree (+2)
[b]T-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here.

Table 7. Difference between farmers and non-farmers in the importance of practice outcomes and effectiveness of conservation practices

Survey item[a]	Respondent type	N	Mean	SD	t[c]
Importance of practice outcomes[a]					
Improving wildlife habitat	Farmer	107	1.18	1.11	-4.012
	Non-farmer	81	1.73	0.61	
Reducing nutrient loss from my farm/property	Farmer	107	1.54	0.80	2.775
	Non-farmer	80	1.18	1.00	
Increasing yield	Farmer	105	1.21	1.06	5.678
	Non-farmer	75	0.24	1.22	
Maintaining the legacy of my farm	Farmer	106	1.42	0.99	4.052
	Non-farmer	75	0.77	1.17	
Freedom in making decision on my land/farm	Farmer	107	1.68	0.73	2.681
	Non-farmer	81	1.33	1.05	
Effectiveness of conservation practices[b]					
Increasing yield	Farmer	102	0.69	0.96	4.089
	Non-farmer	74	0.08	0.98	
Maintaining the legacy of my farm	Farmer	103	1.02	0.92	3.820
	Non-farmer	73	0.47	0.99	

[a]Items measured on a five-point scale from very unimportant (-2) to very important (+2)
[a]Items measured on a five-point scale from very ineffective (-2) to very effective (+2)
[c]t-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here
SD = Standard deviation

Table 8. Difference between farmers and non-farmers in their perceived self-efficacy and collective efficacy to use conservation practices

Survey item[a]	Respondent type	N	Mean	SD	t[b]
Self-efficacy[a]					
Filter strips	Farmer	97	2.18	0.97	3.997
	Non-farmer	74	1.50	1.24	
Grassed waterways	Farmer	97	2.22	0.97	2.797
	Non-farmer	72	1.75	1.20	
Alternative tile inlets	Farmer	97	1.62	1.12	3.552
	Non-farmer	71	0.99	1.16	
Cover crops	Farmer	97	1.86	0.92	4.891
	Non-farmer	71	1.06	1.19	
Conservation tillage	Farmer	97	2.00	1.02	6.223
	Non-farmer	71	0.96	1.14	
Collective efficacy[a]					
Native grasses	Farmer	89	1.88	0.88	-2.753
	Non-farmer	68	2.26	0.87	
Lakeshore restoration/stabilization	Farmer	88	1.41	1.05	-2.893
	Non-farmer	65	1.89	0.99	

[a]Items measured on a four-point scale from not at all capable (0) to very capable (3)
[b]t-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here
SD = Standard deviation

Table 9. Difference between farmers and non-farmers in their likelihood of future action and willingness to pay

Survey item	Respondent type	N	Mean	SD	t[c]
Likelihood of future action with SWCD[a]					
Recommend working with SWCD to other landowners	Farmer	108	1.19	1.13	-4.150
	Non-farmer	82	1.77	0.61	
Talk to others about working with SWCD	Farmer	108	1.00	1.14	-4.475
	Non-farmer	82	1.62	0.62	
Willingness to pay[b]					
I am willing to contribute more toward maintaining conservation practices	Farmer	108	0.33	1.14	-3.161
	Non-farmer	82	0.55	1.10	

[a]Items measured on a five-point scale from very unlikely (-2) to very likely (+2)
[b]Item measured on a five-point scale from strongly disagree (-2) to strongly agree (+2)
[c]t-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here
SD = Standard deviation

Table 10. Difference between farmers and non-farmers in their sense of responsibility and personal norms

Survey item[a]	Respondent type	N	Mean	SD	t[b]
Responsibility[a]					
It is my personal responsibility to help protect water resources	Farmer	107	1.45	0.65	-3.639
	Non-farmer	81	1.77	0.51	
It is my personal responsibility to make sure that what I do on my land does not contribute to water resource problems	Farmer	107	1.53	0.68	-3.852
	Non-farmer	81	1.85	0.36	
Personal norms (I feel a personal obligation to…)[a]					
maintain my land/farm in a way that does not contribute to water resource problems	Farmer	106	1.51	0.67	-2.723
	Non-farmer	80	1.75	0.49	
protect water resources	Farmer	105	1.56	0.59	-2.923
	Non-farmer	81	1.79	0.44	

[a]Items measured on a five-point scale from strongly disagree (-2) to strongly agree (+2)
[b]t-test statistic for testing differences in means. Only items with statistical differences at a significance level of $p \leq 0.01$ reported here
SD = Standard deviation