An Assessment of Farmer Engagement in the Land Stewardship Project's Soil Health Program

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Center for Changing Landscapes
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Land Stewardship Project

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Summary of Findings

This report describes the findings of an assessment of the Land Stewardship Project's Soil Health Program. Data were collected in 2024 and 2025 using an online and mail survey of program participants, and two focus groups with LSP Soil Hubs in Plainview and Austin, Minnesota. A total of 242 mail survey responses and 298 online survey responses were obtained for response rates of 15.5% and 10.0% respectively.

What are sociodemographic and property characteristics of farmers engaged in LSP's Soil Health Program?

- **97%** Identify as White
- **74%** Identify as Male
- **53%** 60 years or older
- **51%** Own more than 179 acres of land
- **58%** Reported gross values of sales less than 100k
- **82%** Own and manage their land

What are the impacts of the LSP's Soil Health Program on practice use and participant beliefs?

Most survey respondents use soil management practices on their land. Almost **23,000 acres** were added in soil health practices since January 2023 among program participants who responded to the survey. The program has also enhanced knowledge about healthy soils and inspired respondents to use conservation practices.

223,218 acres **currently** in soil health practices

22,955 acres in soil health practices **added since January 2023**

76% currently use **cover crops** in some to all possible locations on their farm

76% agree that LSP's Soil Health Program is **important to conservation in Minnesota**

69% currently use **conservation tillage** in some to all possible locations on their farm

71% agree that LSP's Soil Health Program has enhanced their **knowledge of healthy soils**

When asked what LSP should keep, change, or drop in a direct evaluation of the Soil Hub peer-to-peer learning circles, focus group participants had several suggestions, including:

1. Continue to support programs where farmers can hear from each other
2. Strengthen farmer access to programs and information
3. Support programming to educate the public on soil health
4. Engage with non-farmers and policymakers

What are farmers' motivations to engage in soil health management?

Improving soil health and protecting or improving water resources are important motivators for most respondents participating in LSP's Soil Health Program. Most respondents would be more likely to add more acres to existing soil health practices if they could talk to other farmers who are using the practice.

89% rate **improving soil health** as a very to extremely important factor in their decision to participate in LSP's Soil Health Program

72% agree that they would be more likely to add more acres to existing soil health practices if they could **talk to other farmers who are using the practice**

84% rate **protecting or improving water resources** as a very to extremely important factor in their decision to participate in LSP's Soil Health Program

67% agree that they would be more likely to add more acres to existing soil health practices if they had **evidence that it would improve their financial bottom line**

The focus groups revealed multiple motivations for joining Soil Hub peer-to-peer learning circles and for maintaining membership. Key motivators included:

1. Learning about soil health and ways to increase return on investment
2. Connecting and building comradery with other farmers

What are farmers' perspectives about soil health?

Most respondents believe that soil management practices are important for farming and water resources. While most respondents believe they have the knowledge and skills needed to use soil management practices, fewer respondents believe they have the financial resources and equipment to use soil management practices. Most respondents are influenced in their decisions about soil management practices by their family, other farmers, federal-level departments, LSP's Soil Health Program, and University Extension and research.

96% agree that soil management practices are critical to **protecting water resources** in their region

81% agree that they have the **knowledge and skills** to use soil management practices on the land

91% agree that soil management practices are critical to the **productivity of their farm/land**

61% reported that their **family** has moderate to extreme amount of influence on their decisions about soil management practices

Focus group participants observed many benefits of using soil health practices including economic, ecological, and quality of life benefits. Farmer participants also identified challenges to achieving or sustaining soil health including the economics and risk associated with diverse crop rotations. Key challenges identified included:

1. Lack of public understanding of soil health and soil health practices
2. Policies that hinder transformative social change

Background

The Land Stewardship Project (LSP) is a non-profit organization with a threefold mission: fostering an ethic of stewardship for farmland, promoting sustainable agriculture, and developing healthy communities. LSP, which launched in 1982, has approximately 4,000 member households today. LSP connects agricultural producers, their families, and communities to sustainable practice networks and applied research in food and farming systems. One such example is their Soil Health Program, including the development of soil health hubs to organize and support farmer-to-farmer engagement on critical issues such as soil health, perennial cropping systems, and rotational grazing.

The goal of this soil health assessment study is to examine the impacts LSP's Soil Health Program has had on farmers, the land, and farming communities and to set the stage for future soil health programming. Specifically, this study investigates farmer beliefs and behaviors associated with soil health. Community members of primary interest in this study are crop and livestock farmers who are engaged in LSP's soil health program. Among those 4,000 contacts, 1,500 are enrolled members of the Soil Builders Network and participate in events and peer-to-peer hubs.

LSP contracted Principal Investigators Amit Pradhananga, PhD, and Mae Davenport, PhD, environmental social scientists at the University of Minnesota to lead this study. Pradhananga and Davenport (henceforth the researchers) conducted surveys of farmer contacts and focus groups with farmer participants in Soil Hubs to assess farmer beliefs and behaviors associated with soil health. For this study, behaviors include both private-sphere behaviors (e.g., use and maintenance of conservation practices) and civic engagement behaviors (e.g., participation in farmer hubs).
The primary research questions driving this study are:

1. What are sociodemographic and property characteristics of farmers engaged in LSP's Soil Health Program?
2. What are the impacts of LSP's Soil Health Program on practice use and participant beliefs?
3. What are farmers' motivations to engage in soil health management?
4. What are farmers' perspectives about soil health?

Methodology

We used a mixed-methods approach, which included a survey of LSP's Soil Health Program participants, and two focus groups with LSP Soil Hubs in Plainview and Austin, Minnesota.

Survey Methods

We collected quantitative data using a survey of LSP's Soil Health Program participants. We used a mixed-mode survey approach. First, we sent an email with a survey link to 3,595 program participants. Next, we administered a mail survey with 1,600 program participants.

Survey instruments were designed based on literature review and feedback from project partners. The survey questionnaire included a variety of fixed-choice and scale questions. Questions also were adapted from previous research and survey instruments about attitudes, beliefs, and conservation behaviors (Davenport & Pradhananga, 2012; Davenport, Pradhananga, & Olson, 2014; Pradhananga, Perry, & Davenport, 2014; Pradhananga and Davenport, 2017; Pradhananga et al., 2023; Pradhananga and Davenport, 2022; Water Resources Center, "Your Perspectives on Soil Management, 2024 Farmer Survey"). The questionnaire asked respondents about soil health management practices, beliefs and attitudes related to soil health, perspectives on LSP's Soil Health Program, social influences on conservation decision making, and demographic and property characteristics. An adapted Dillman's (2014) method was used to increase response rate, which included three emails and two waves of mailings. Each wave of mail survey packet included the questionnaire (Appendix A) and a cover letter (Appendix B). The email survey was developed and administered using Qualtrics. The surveys were administered from October 2024 to January 2025.

Online survey responses were automatically coded and saved in a database within Qualtrics. Returned mail surveys were logged into the respondent database using Microsoft Excel. Data were analyzed using IBM Statistical Package for Social Sciences version 28.0. A total of 242 mail survey responses and 298 online survey responses were obtained for response rates of 15.5% and 10.0% respectively.

Focus Group Methods

The researchers facilitated two focus groups with LSP Soil Hubs in Plainview and Austin, Minnesota in February 2025. Each focus group lasted 60 minutes. LSP staff hosted the focus groups, provided an overview of the assessment study, and documented the conversations through notetaking. The researchers facilitated the discussion which started with an informed consent process, including descriptions of the study process, rights of participants, and a promise of anonymity in further publications. The dialogue proceeded with five core questions and multiple probing or followup questions (see focus group script, Appendix C). The researchers led an idea listing exercise and listed ideas on flipchart paper for the groups to review and add any reflections or pose questions to each other. LSP staff compiled notes and shared them with the researchers, who analyzed the notes for convergent and divergent themes and descriptive theme details following standard procedures in qualitative analysis (Charmaz, 2014; Krueger & Casey, 2009).

The focus group discussions were facilitated around 5 primary topics:

- Motivations to join and stay enrolled in the Soil Hub program
- Benefits of soil health practices
- Challenges to sustaining soil health
- Indicators of success on the farm
- Benefits of and growth areas for LSP's Soil Hub program

The researchers organized the topic area discussions into six concept diagrams to visually display emergent themes, relationships, and patterns. The concept diagrams show ellipses that are connected by lines (direct primary theme relationship), overlap (closely related), or are clustered (group of related themes). Ellipses shaded in color come directly from farmers' perspectives either as quotes or paraphrases. Ellipses that are unshaded or white are themes that were inferred by the researcher, based on several similar ideas.

Findings

What are sociodemographic and property characteristics of farmers engaged in LSP's Soil Health Program?

More than two-thirds of survey respondents were from Minnesota (Appendix D, Table 1; see figure 1 for distribution of respondents by county). Most respondents reported their race/ethnicity as White (98%) and identified as male (74%) (Figure 2; Appendix D, Table 2). Most respondents were 60 years or older (53%) (Figure 3; Appendix D, Table 2).

Figure 1
Number of survey respondents by county in Minnesota

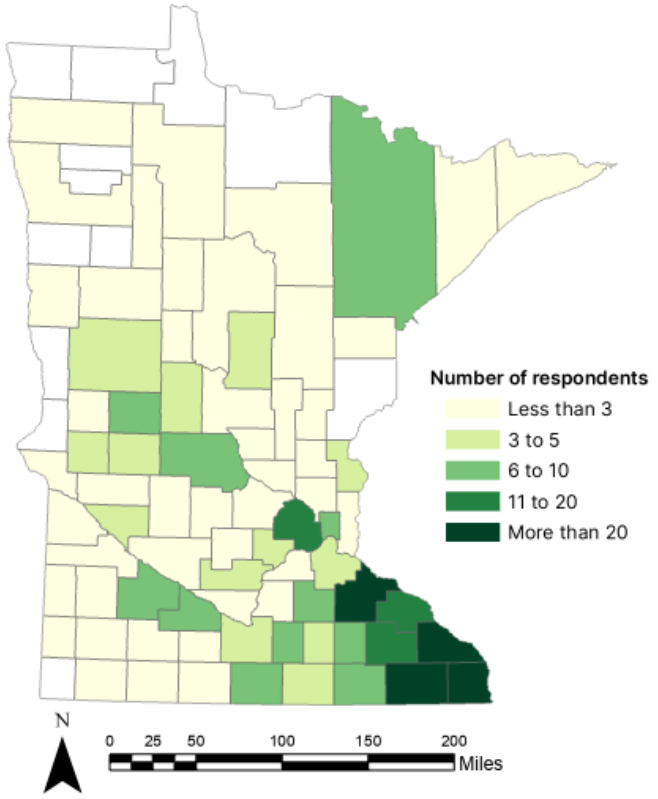
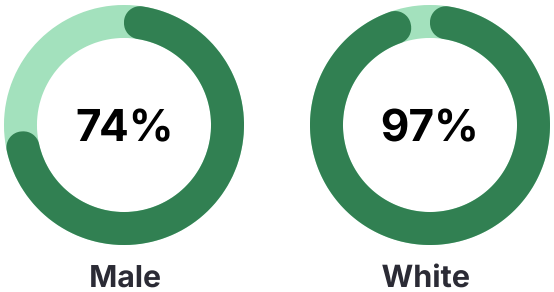
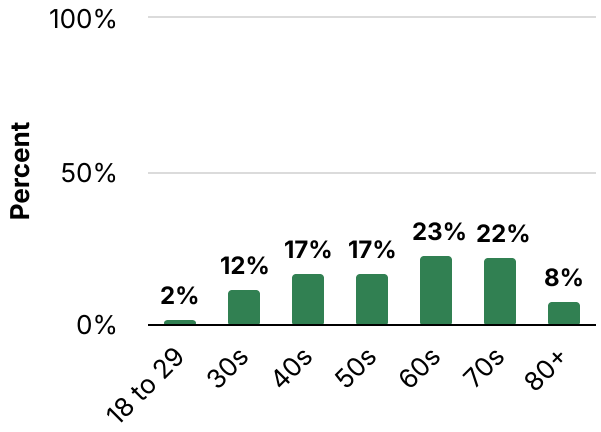


Figure 2
Respondents' reported gender identity and race/ethnicity



Survey questions: Are you...?
What category best describes you? (Respondents could check more than one option)

Figure 3
Respondents' age groups

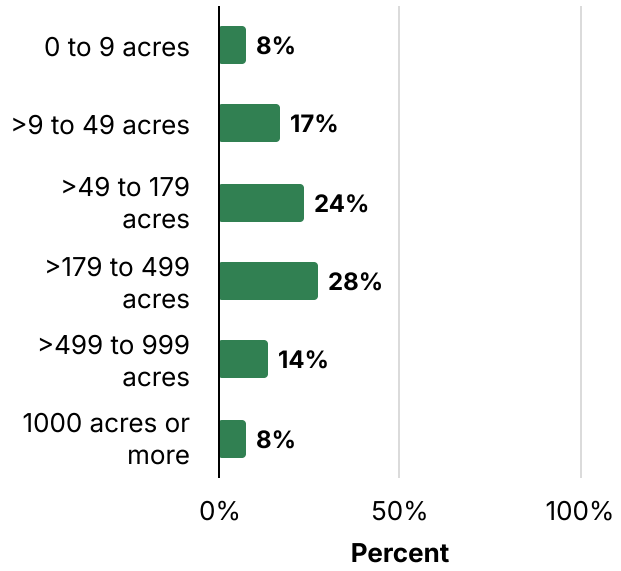


Survey question: What is your age?

Most survey respondents (82%) own and manage their land. Almost one-half of respondents (45%) also rent land from others. About one-half of the respondents' (51%) property size was more than 179 acres (Figure 4; Appendix D, Table 3). Yearly total gross value of sales for most respondents (58%) was less than $100,000 (Figure 5; Appendix D, Table 3).

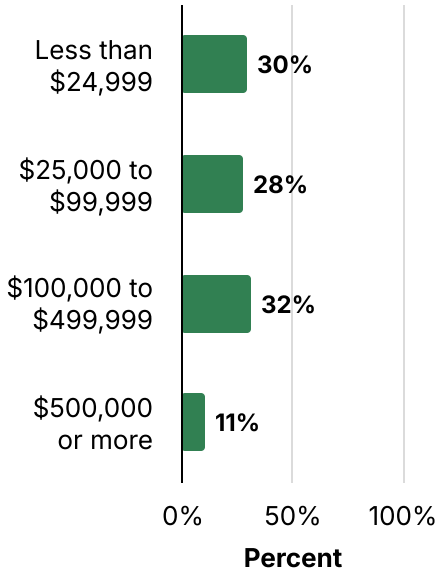
A vast majority of respondents (95%) make their own decisions about crop production and soil management on the land they own. Most respondents also make their own decisions about crop production (81%) and soil management (76%) on rented land (Figure 6; Appendix D, Table 4).

Figure 4
Respondents' property size



Survey question: In 2023, approximately how many total acres of this farmland were in the following categories?

Figure 5
Respondents by yearly gross value of sales from their farm



Survey question: Including sales of crops, livestock, poultry, miscellaneous agricultural products, and government agricultural payments in 2023, which category represents the yearly total gross value of sales from your farm?

Figure 6
Respondents' decision making on land they own and rent

95%
Make their own decisions about **crop production and soil management** on land they own

81%
Make their own decisions about **crop production** on land they rent

76%
Make their own decisions about **soil management** on land they rent

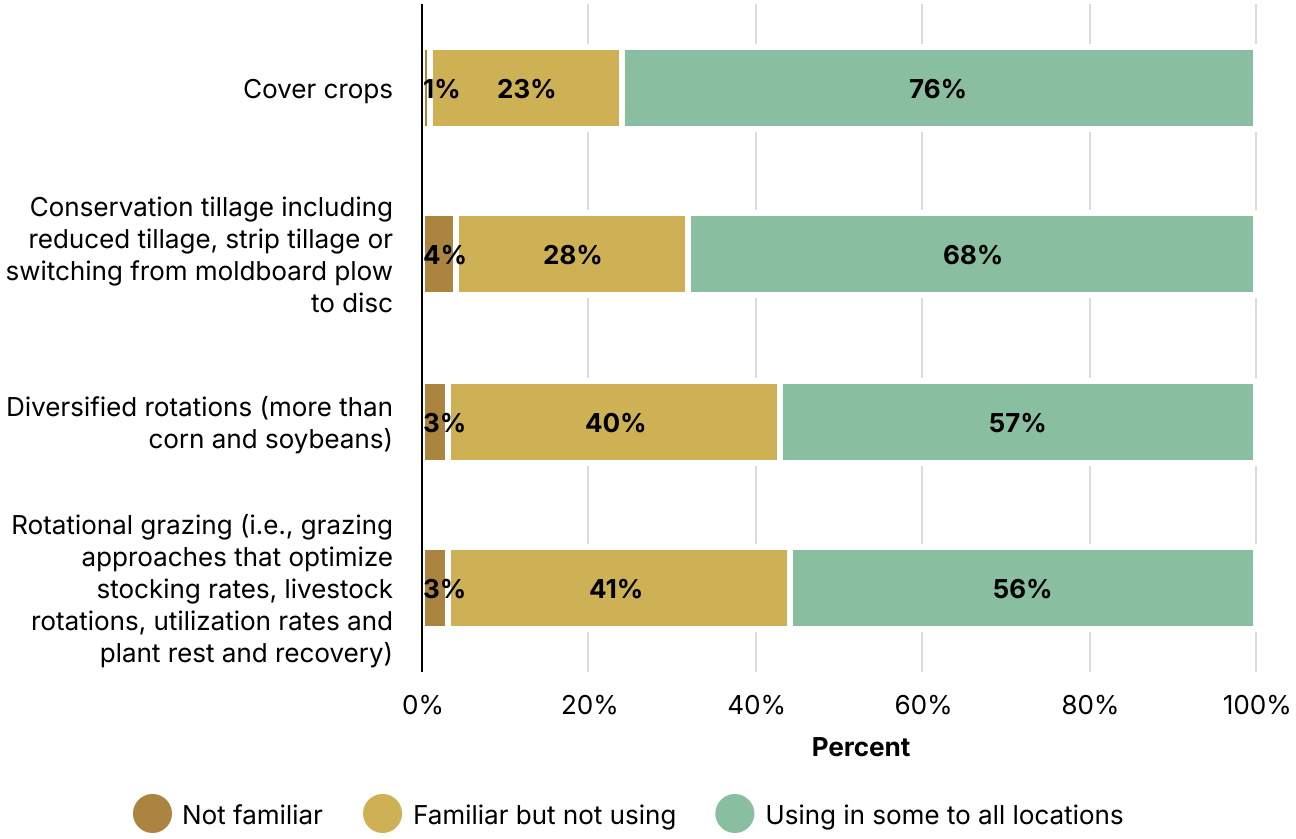
Survey question: On the cropland you farm, who makes decisions about soil management?

What are the impacts of LSP's Soil Health Program on practice use and participant beliefs?

Survey respondents were asked to what extent they use soil management practices on the land they farm. More than two-thirds of respondents (76%) reported that they use cover crops in some to all possible locations. A majority of respondents also reported using conservation tillage (68%), diversified rotations (57%), and rotational grazing (56%) (Figure 7; Appendix D, Table 5).

Figure 7

Respondents' use of soil management practices on the land they farm



Survey question: Since 2023, have you used any of these soil management practices on the land you farm? Please consider the categories below for each practice and check one box in each row.

In a survey conducted by LSP in 2022, respondents were asked to report the number of acres moved into soil health practices since January 2020. Between 2020 to the time of the survey, which represents three growing seasons, 6,962 acres were moved into reduced tillage and 8,626 acres were moved into cover crops (Table 1). We build on this work in the current survey to assess number of acres added in soil health practices.

Table 1

Reported number of acres of soil health practices added from 2020 to 2022

	Acres moved into practice since January 2020
Reduced tillage	6,962
No till	6,926
Cover crops	8,626
Rotational grazing	3,415

Survey respondents were asked to report the total number of acres in each soil health practice currently, and number of acres moved into each practice since January 2023. The data gathered here represent acres added in soil health practices in two growing seasons (i.e., 2023 and 2024). The highest number of acres currently used was in conservation tillage. The highest number of acres added since January 2023 was in rotational grazing. It should be noted that a single participant reported adding 9,000 acres in rotational grazing since January 2023 (Table 2; Appendix D, Tables 5 and 6).

Table 2

Reported number of acres of soil health practices added

	Total acres in practice currently	Acres added since Jan 2023 (data from current survey)		
		n	%	Acres
Conservation tillage including reduced tillage, strip tillage or switching from moldboard plow to disc	76,265	22	8.0%	4,778
Cover crops	60,612	38	13.8%	5,086
Diversified rotations (more than corn and soybeans)	45,230	21	7.6%	2,196
Rotational grazing (i.e., grazing approaches that optimize stocking rates, livestock rotations, utilization rates and plant rest and recovery)*	41,114	27	9.8%	10,409
Total acres	**223,218**			**22,955**

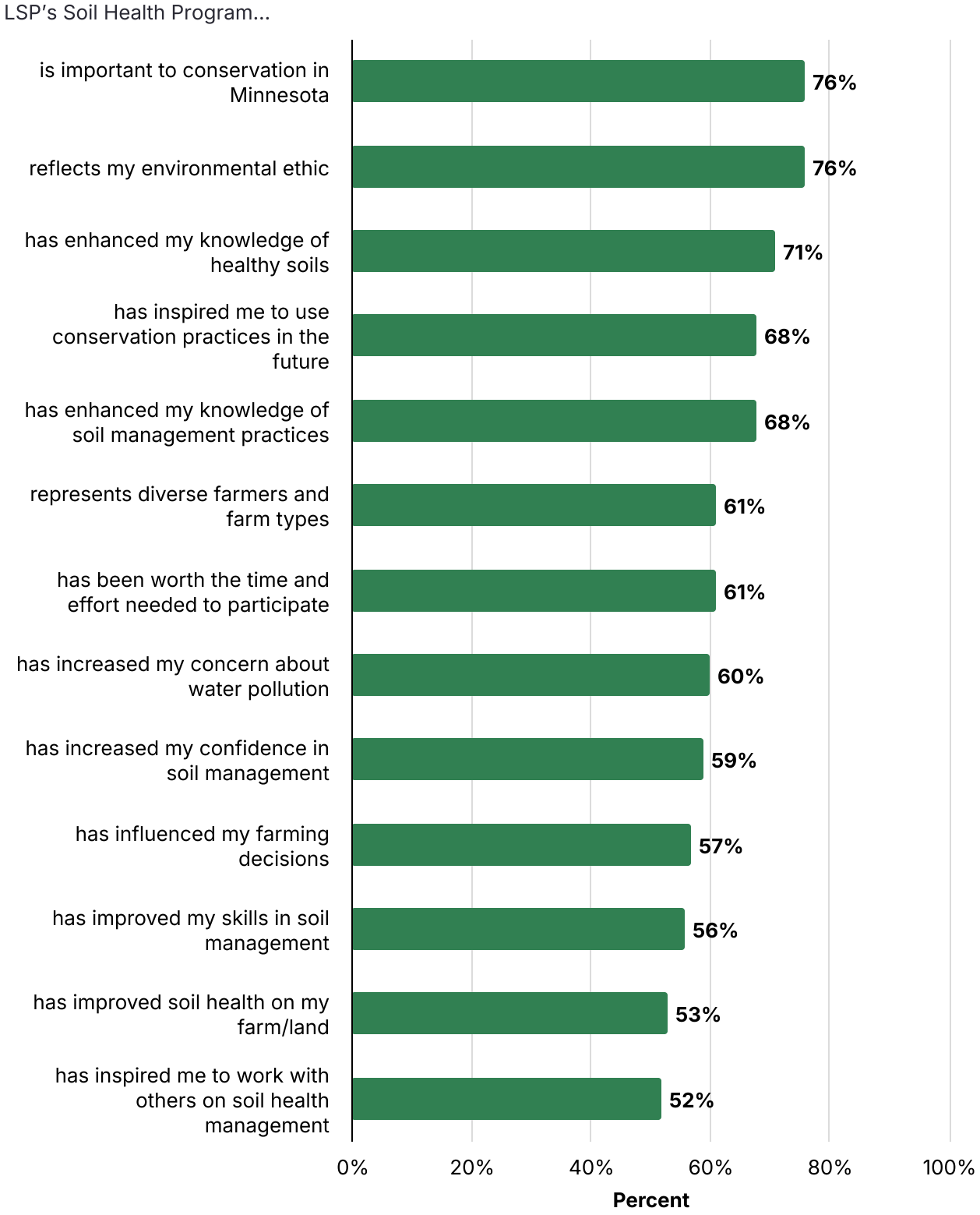
n: number of respondents who reported added acres since Jan 2023.
%: Percent of respondents who added acres among those who responded to the survey question (n for 2024 survey = 291).
*Includes 9,000 acres reported by one participant from outside Minnesota.

Survey respondents were asked to rate their satisfaction with LSP's Soil Health Program. A majority of respondents (60%) reported that they are somewhat to very satisfied with the program (Appendix D, Table 7). Respondents were also asked to rate a series of statements about LSP's Soil Health Program. Most respondents somewhat to strongly agreed that LSP's Soil Health Program is important to conservation in Minnesota (76%) and that the program reflects their environmental ethic (76%). More than two-thirds of respondents also agreed that LSP's Soil Health Program has enhanced their knowledge of healthy soils (71%), inspired them to use conservation practices in the future (68%), and enhanced their knowledge of soil management practices (68%). A majority of respondents agreed that the program has increased their concern about water pollution (60%), improved their skills in soil management (56%), and improved soil health on their farm/land (53%) (Figure 8; Appendix D, Table 8).

Figure 8

Respondents' perspectives about the LSP's Soil Health Program

% somewhat to strongly agree

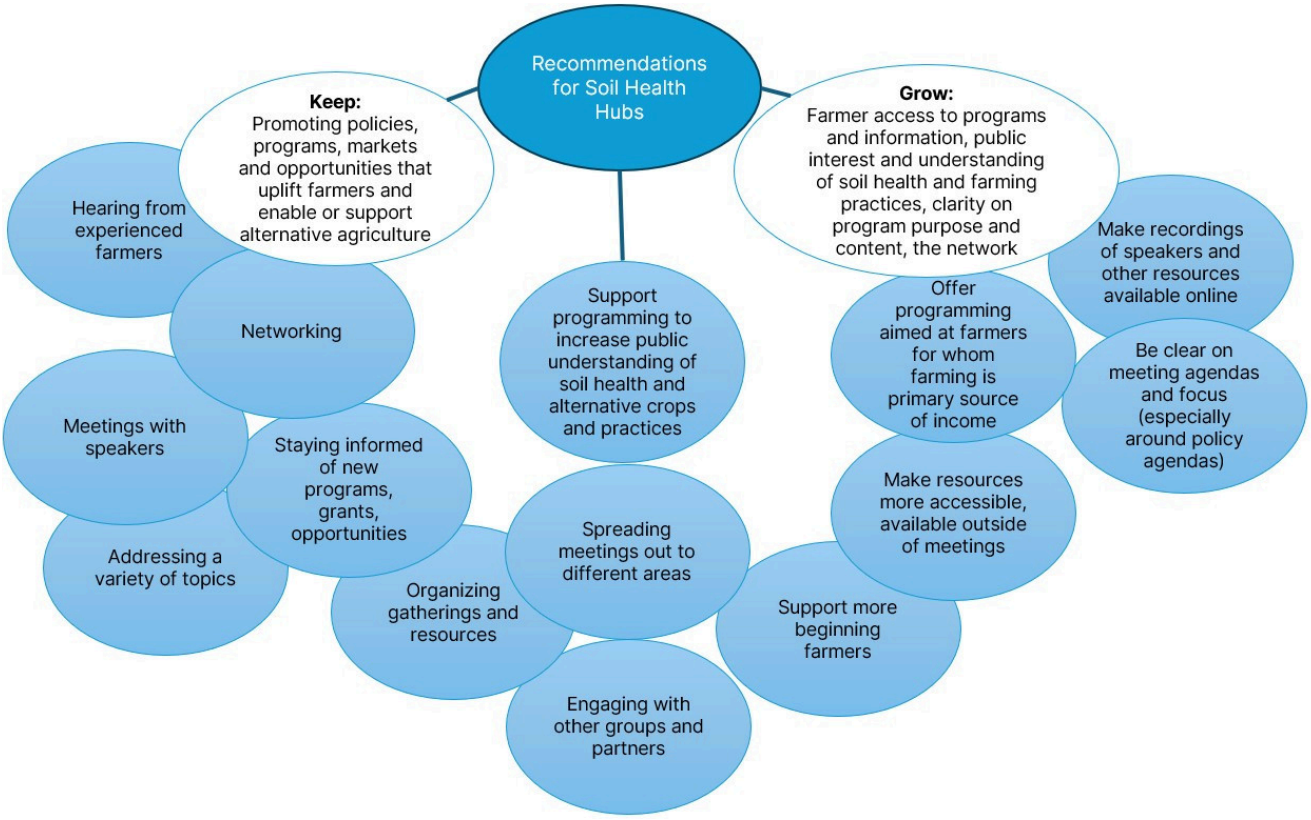


Survey question: To what extent do you agree or disagree with the following statements? (Response on a five-point scale from strongly disagree to strongly agree)

When asked what LSP should keep, change, or drop in a direct evaluation of the Soil Health Hub program, focus group participants had several suggestions (Figure 9). They encouraged LSP to continue to promote policies, programs, markets, and related opportunities that uplift farmers and enable or support them in alternative agricultural practices. Specific opportunities participants value include hearing from experienced farmers, networking, and staying informed on programs and grants. A few participants shared suggestions for growth. These participants explained that a future vision for LSP Soil Hub program should strengthen farmer access to programs and information outside of meetings with newsletters and updates over email and on their website. They also thought a gap that LSP could address is in the public interest and understanding of soil health and farming practices. Participants described a desire to have a bigger presence on social media and at public events that include non-farmers and policy makers to raise awareness of their commitment to and success in soil health and sustainability that have direct local and societal benefits.

Figure 9

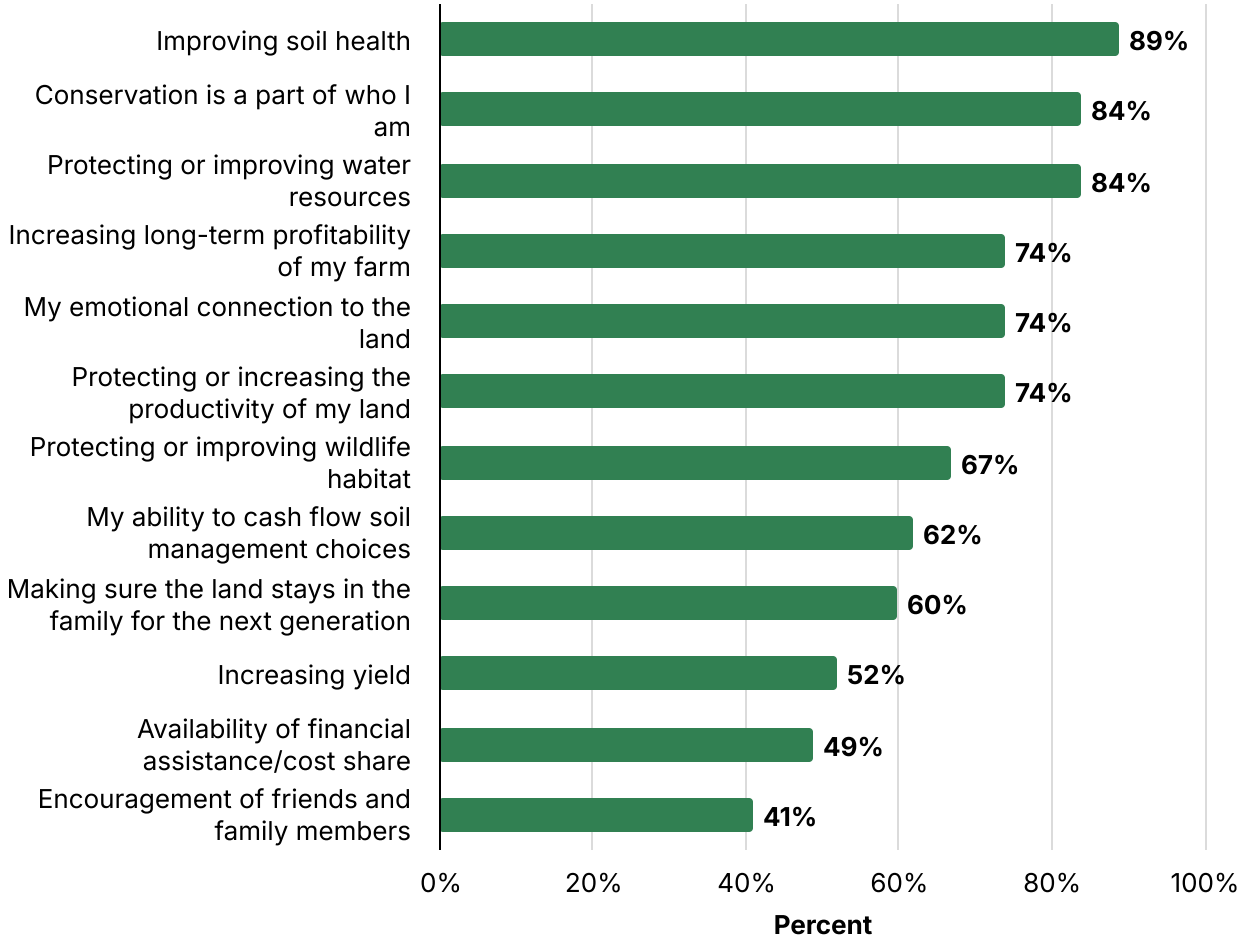
Focus group participants' vision for LSP's Soil Health Hub



What are farmers' motivations to engage in soil health management?

Survey respondents were asked to rate the importance of various factors in their decision to participate in LSP's Soil Health Program. A vast majority of respondents rated "improving soil health" (89%), "conservation is a part of who I am" (84%), and "protecting or improving water resources" (84%) as very to extremely important factors in their decision to participate in LSP's Soil Health program. Less than one-half of respondents rated availability of financial assistance/cost share and encouragement of friends and family members as very to extremely important factors (Figure 10; Appendix D, Table 9).

Figure 10
Respondents' motivations to participate in the LSP's Soil Health Program
% very to extremely important



Survey question: How important were the following factors in your decision to participate in the LSP's Soil Health Program? (Response on a five-point scale from not at all important to extremely important)

Survey respondents were asked about factors that would increase their likelihood of adding more acres to existing soil health practices in the future. More than 70% of respondents agreed that they would be more likely to add more acres to existing soil health practices if they had evidence that the practice improved soil health, if they could talk to other farmers who are using the practice, and if they could see successful examples of the practice. Less than 40% of respondents agreed that they would be more likely to add more acres if their neighbors used the practice (36%) or if there were regulations that mandated using the practice (33%) (Figure 11; Appendix D, Table 10).

Figure 11

Factors that would increase the likelihood that respondents would add more acres to existing soil health practices

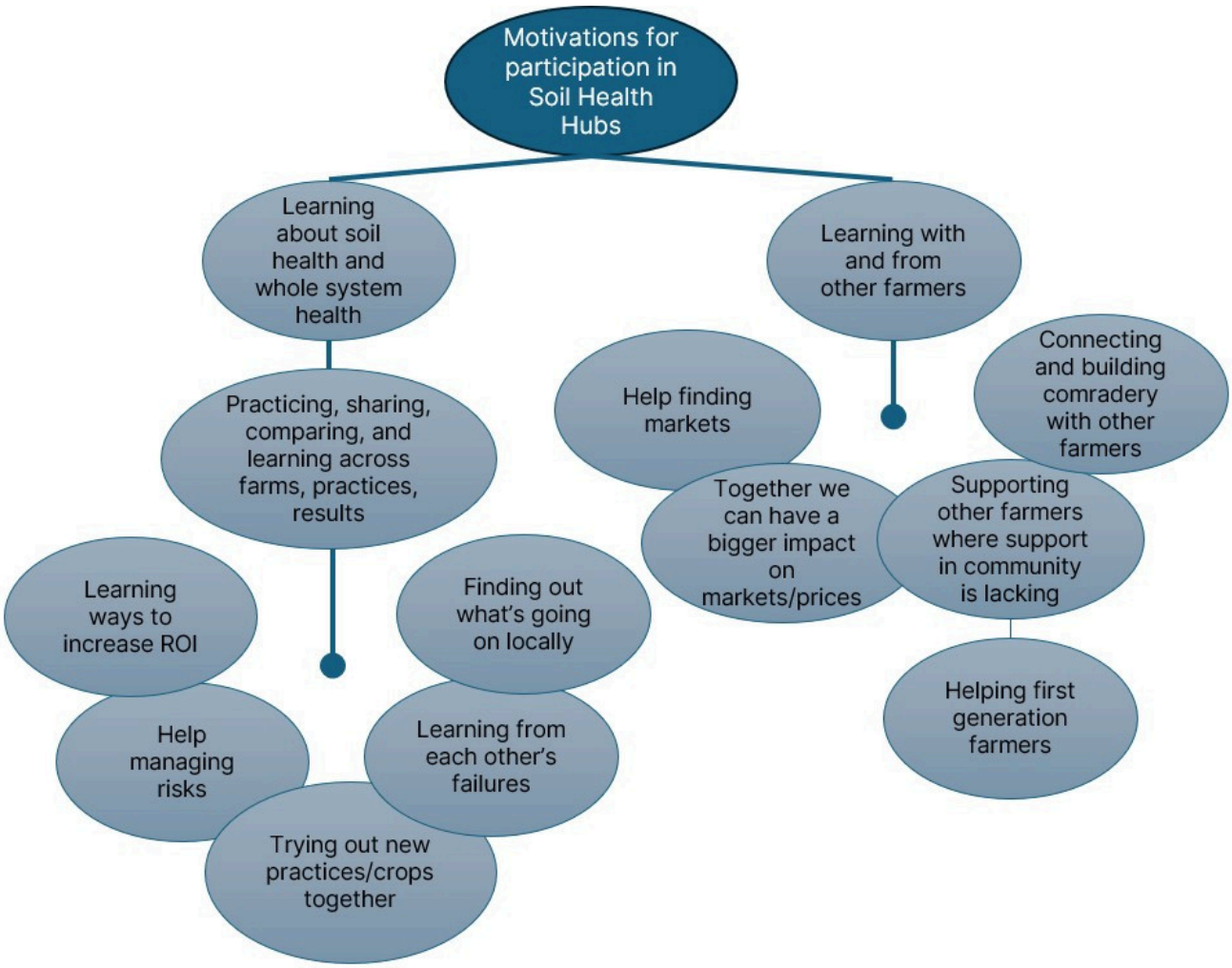
% somewhat to strongly agree

Survey question: To what extent do you agree or disagree with the following statements? (Response on a five-point scale from strongly disagree to strongly agree)

The focus groups revealed multiple motivations for joining Soil Hubs and for maintaining membership including the core opportunities to learn about soil health and to learn with and from other farmers (Figure 12). Focus group participants appreciated being able to practice, share, compare and learn across farms, practices, and results. They identified Soil Hub benefits including help finding markets, having a bigger impact on markets, and supporting farmers where support can be lacking in the broader community. Focus group participants described added efficiencies such as having "more room in the machine shed," using "way less diesel," seeing fewer "crappy spots" in their crops, and experiencing "far less water runoff" than their neighbors. These time and financial efficiencies have led to reduced inputs, higher yields, and higher quality of life, according to participants.

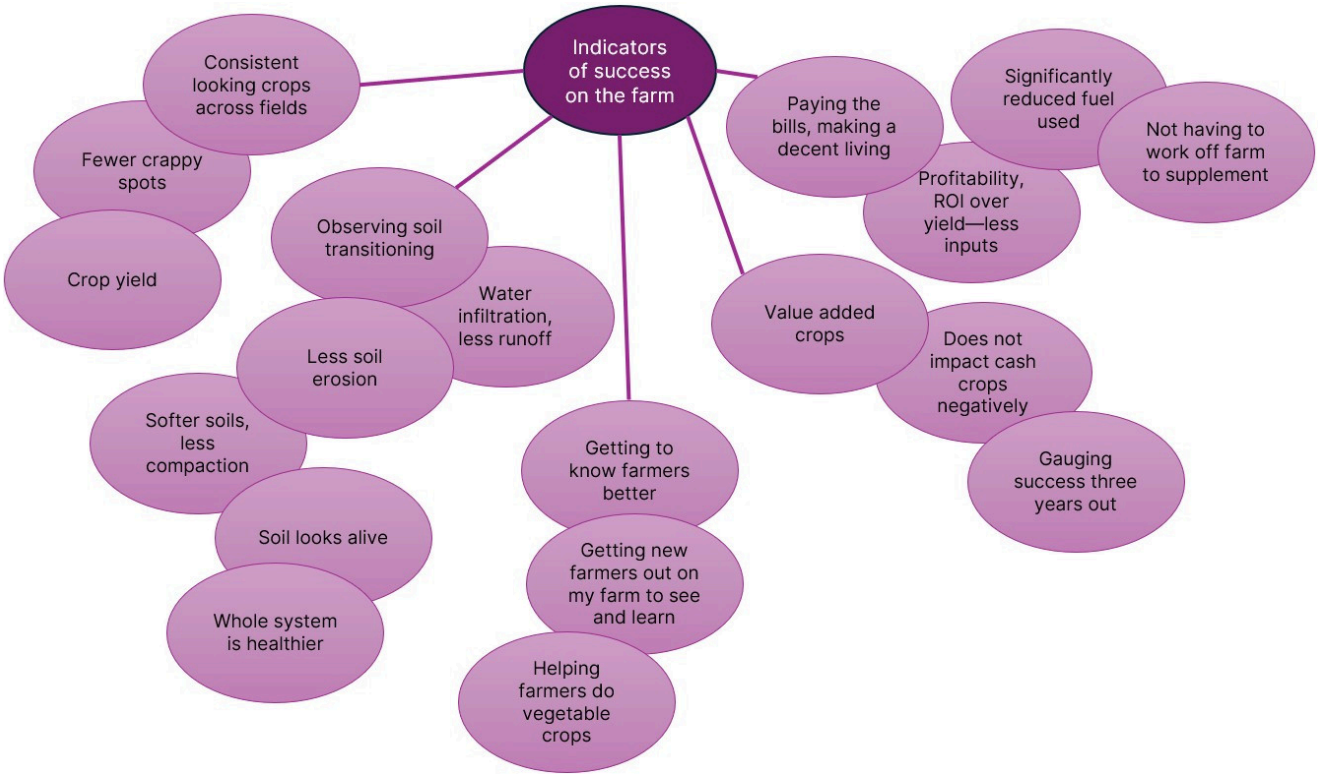
Figure 12

Focus group participants' motivations for joining or staying enrolled in LSP's Soil Health Hub



Several focus group participants acknowledged that farmers need to see success on the field before they will adopt soil health practices. What are farmers looking for? What are signs of success on farms with respect to soil health (Figure 13)? Consistent looking crops across fields, more infiltration and less runoff, softer soil that looks alive, and higher yield emerged as important indicators of success on the farm. Participants also valued their own social and economic successes including getting to know other farmers, adding value added crops, and profitability.

Figure 13
Indicators of success for focus group participants



What are farmers' perspectives about soil health?

Survey respondents were asked to rate a series of statements about soil health. A vast majority of respondents agreed that soil management practices are critical to protecting water resources (96%) and the productivity of their farm/land (91%). Almost two-thirds of respondents also agreed that people who are important to them expect them to use soil management practices on their farm/land (Figure 14; Appendix D, Table 11).

Survey respondents were also asked about their ability to use soil management practices. While most respondents agreed that they have the knowledge and skills they need to use soil management practices (81%), fewer respondents agreed that they have the financial resources (56%) or equipment (49%) needed to use soil management practices. Less than one-half of respondents (48%) agreed that farmers in their community have the ability to work together to support soil management practices (Figure 15; Appendix D, Table 12).

Figure 14

Respondents' beliefs about soil management practices

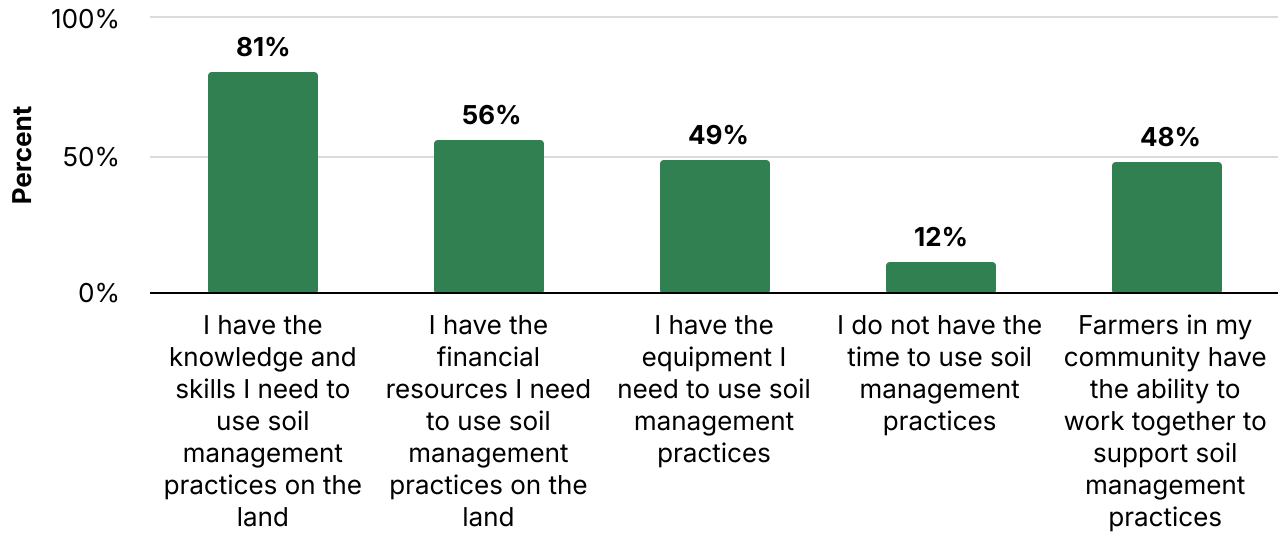
% somewhat to strongly agree

Survey question: To what extent do you agree or disagree with the following statements? (Response on a five-point scale from strongly disagree to strongly agree)

Figure 15

Respondents' beliefs about their ability to use soil management practices

% somewhat to strongly agree



Survey question: To what extent do you agree or disagree with the following statements? (Response on a five-point scale from strongly disagree to strongly agree)

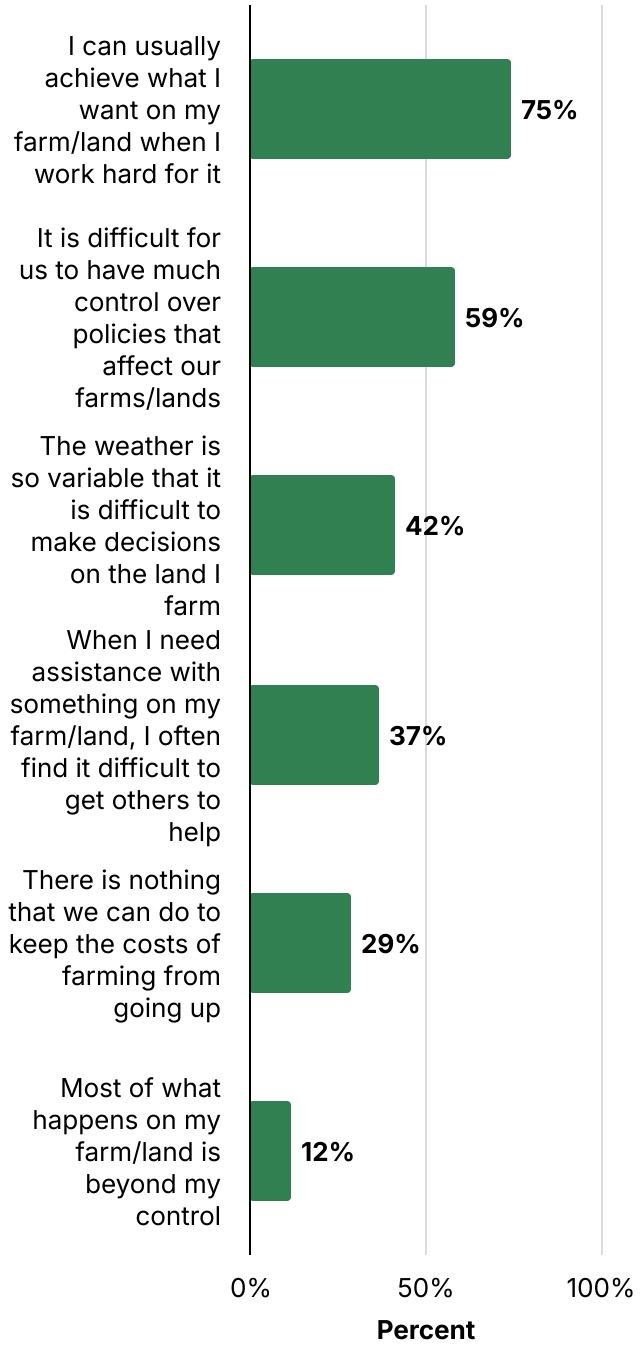
Survey respondents were asked to rate a series of statements about farming. Most respondents (75%) agreed that they can usually achieve what they want on their farm when they work hard for it. Only 29% of survey respondents agreed that there is nothing they can do to keep the costs of farming from going up, and only 12% agreed that most of what happens on their farm/land is beyond their control. However, a majority of respondents (59%) agreed that it is difficult for them to have much control over policies that affect their farms/lands (Figure 16; Appendix D, Table 13).

Survey respondents were asked to rate the level of influence of individuals or groups in their decisions about soil management practices. On average, the most influential groups were family, other farmers, federal-level departments, LSP's Soil Health Program, and University Extension and research. More than half of respondents rated these groups as having moderate to extreme amount of influence on their decisions about soil management practices. About one-quarter of respondents reported that their neighbors (26%) and seed/input dealers (25%) have moderate to extreme amount of influence. Even fewer respondents reported that financial institutions (17%), agricultural commodity associations (15%), and machinery and implement manufacturers/dears (13%) have moderate to extreme influence on their decisions about soil management practices (Figure 17; Appendix D, Table 14).

Figure 16

Respondents' beliefs about farming

% somewhat to strongly agree

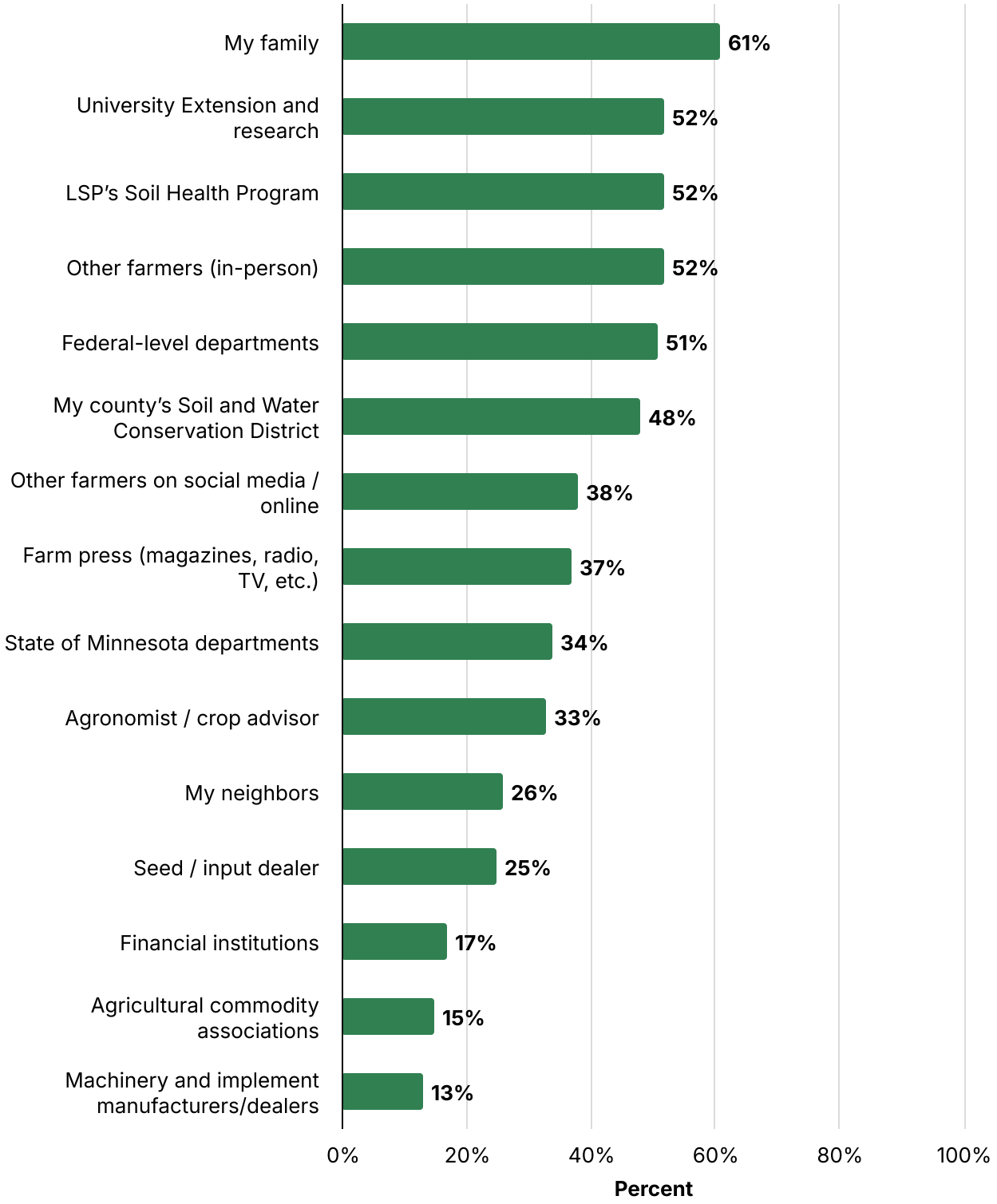


Survey question: To what extent do you agree or disagree with the following statements? (Response on a five-point scale from strongly disagree to strongly agree)

Figure 17

Respondents' reported level of influence of individuals or groups in their decisions about soil management practices

% moderate to extreme amount



Survey question: How much influence do the following individuals or groups have on your decisions about soil management practices on the land you farm? (Response on a five-point scale from no influence to extreme amount)

Focus group participants observed many benefits of using soil health practices on their farms (Figure 18). Two categories of practices: cover crops and no-till offer multiple and related economic, ecological, and quality of life benefits from adding a third crop (e.g., cereal rye), to reducing soil erosion, and to less stress on farmers in the fall. Farmer participants also identified challenges to achieving or sustaining soil health including the economics and risk associated with diverse crop rotations (Figure 19). They also described needed changes in society and farm policy. To some focus group participants, the public, including other farmers, farmland owners, policy makers, and other community members lack an understanding of the importance of soil health and the practices needed to achieve it. Peer pressure or policies that are too restrictive have slowed the transformative social change for wider adoption. In addition, participants viewed large commodity operations as having unequal advantages and more markets that perpetuate those industries.

Figure 18
Benefits of soil health practices for focus group participants

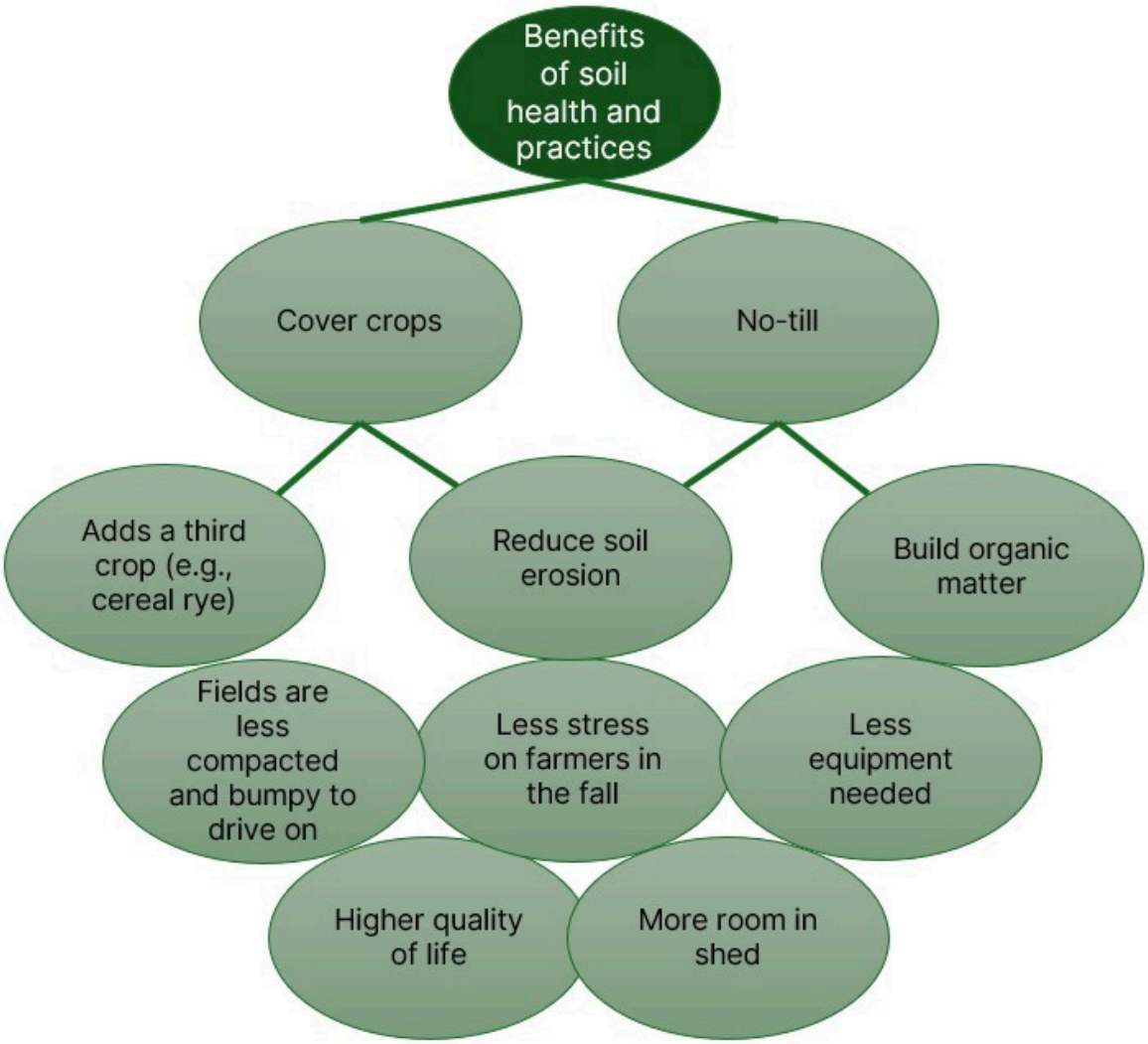
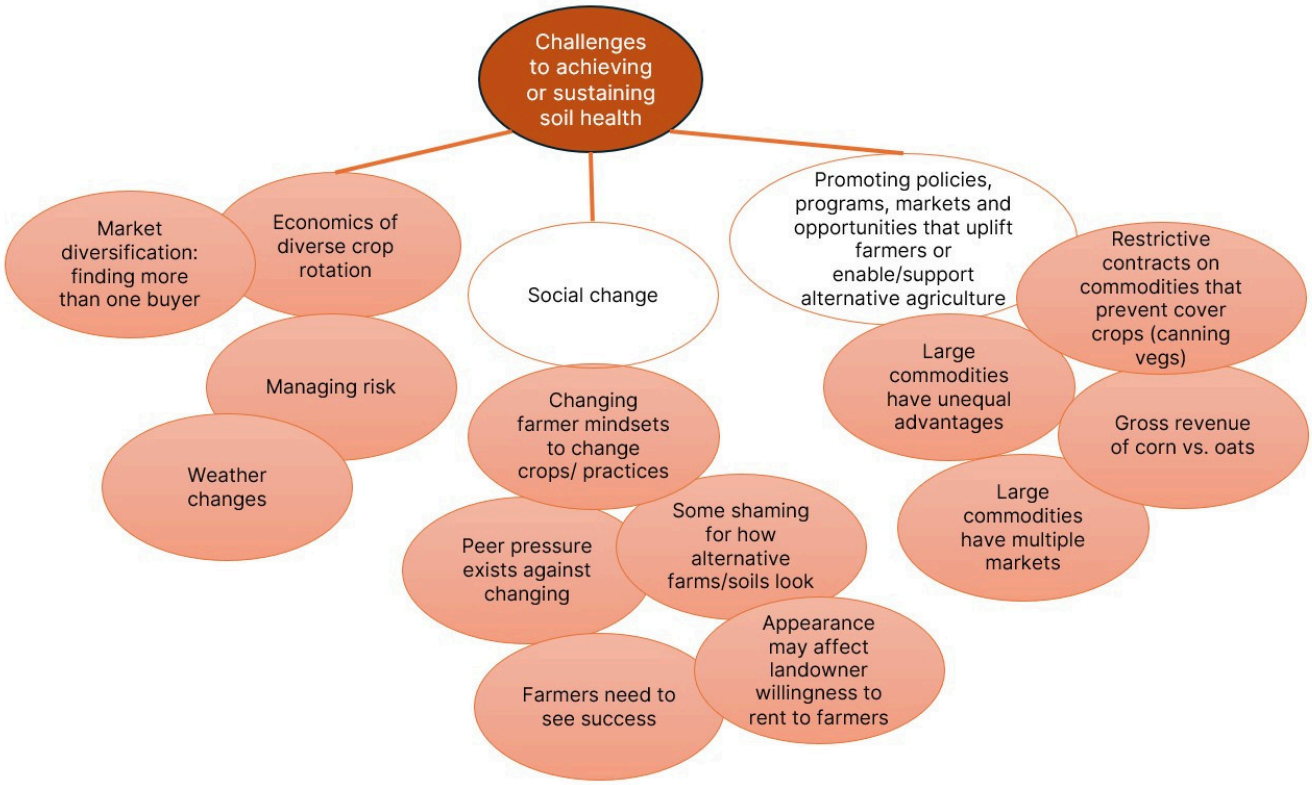


Figure 19

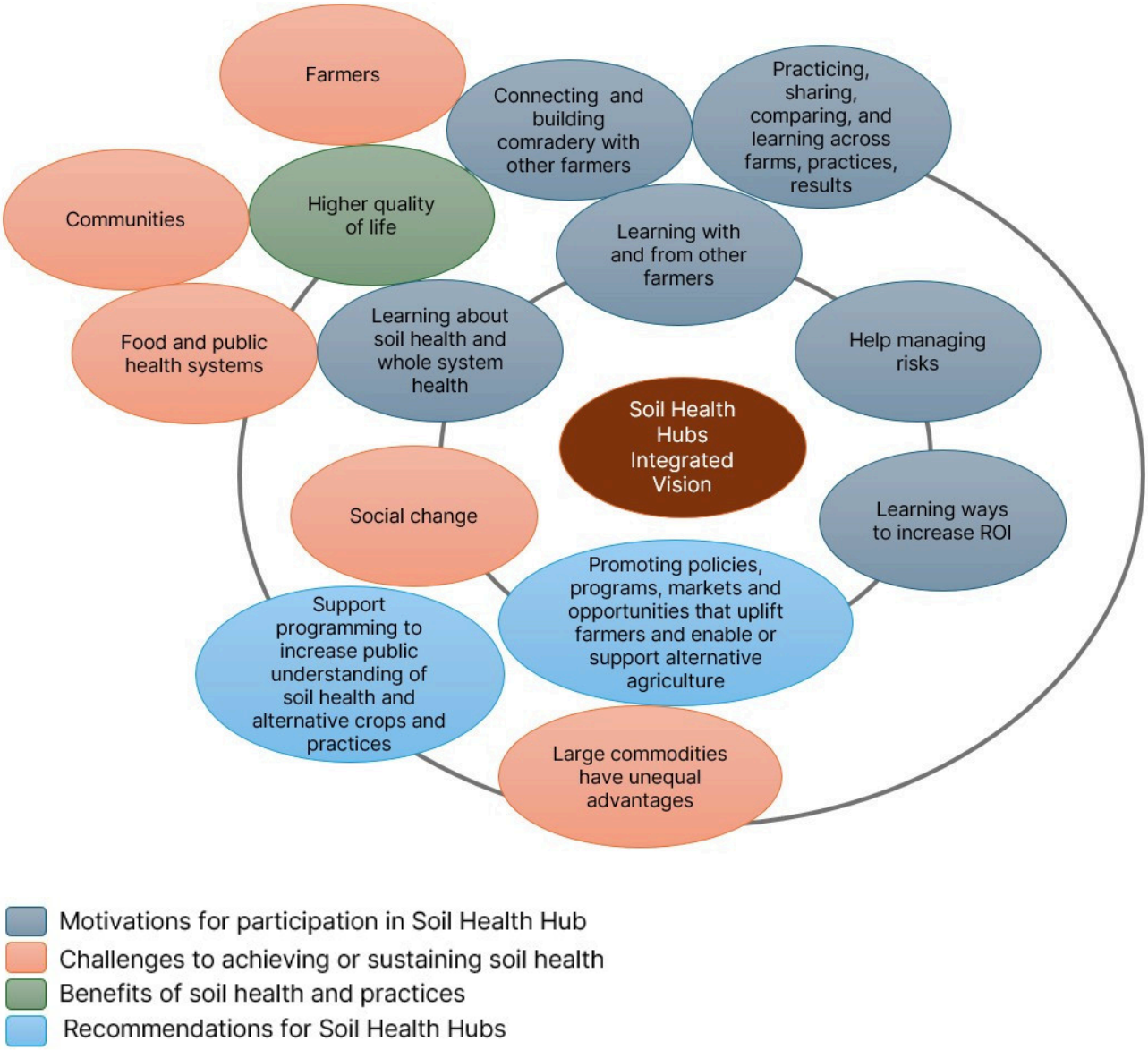
Challenges to achieving or sustaining soil health for focus group participants



In sum, each of these concept diagrams share a collective story from focus group participants about why and how soil health is so important to their farms. Together, they highlight important core concepts to LSP's Soil Hubs and important strategic direction, as well as a vision for growth that farmers would welcome and likely support (Figure 20).

Figure 20

Core concepts and vision for growth for LSP Soil Health Hubs



Implications and Recommendations

Farmer-to-Farmer Relationships Support Soil Health

Farmer participants in this study had a clear message for conservation project, program and policy designers: Farmer connections and engagement with one another builds awareness, skills, confidence, and resilience in soil health and sustainable agriculture. Farmers value LSP's Soil Health Program for connecting them to farmer networks that enable information sharing, and perhaps even more importantly, create a community for sharing stories around what's working and not working on their farms and why. Farmers in focus group discussions acknowledged how much they benefit from the individual mentoring, group strategizing, collective feedback, and social support that the Soil Health Hubs provide, especially in adopting new practices or managing risk. Specifically, farmer participants credited their Soil Health Hubs for enabling experimentation and comparative analysis across farms, for helping them find and create different or new markets, and even for supporting them emotionally, as at times they may feel isolated or ostracized in their communities.

Most program participants surveyed reported that they currently use soil management practices such as cover crops and conservation tillage. Most believe that the program has enhanced their knowledge of healthy soils and soil management practices, inspired them to use conservation practices, improved their skills in and increased their confidence in soil management.

Improving soil health and protecting water resources were important motivators for most survey respondents' participation in the program. Survey findings also suggest that most respondents are likely to add more acres of soil health practices if they had evidence that the practice improved soil health, if they could talk to other farmers, and if they see successful examples. Less than half of the respondents would be motivated by regulations or compensation. However, two-thirds or more of the respondents would be likely to add more acres in soil health practices if they had evidence that the practice would improve their financial bottom line and had access to financial resources.

Show Soil Health Successes and Directly Address Challenges in Outreach and Communications

Outreach and communication that focuses on soil health and water resource protection are likely to continue to increase program enrollment. Farmers who believe the program reflects their environmental ethic are likely to participate. However, future communication should also draw links between specific practices and intended practice outcomes such as improvements in soil health or water quality. Strategies such as farmer networks that allow farmers to talk to others who have used soil management practices are also likely to be successful. Sharing success stories that highlight farms/farmers that have implemented soil management practices are also likely to motivate farmers to use soil management practices. While environmental outcomes of practices are important, farmers are also concerned about their farm's profitability. Therefore, strategies to encourage practice use should also share information about if and how practices may affect farm productivity and complement it with strategies to provide financial support. Farmers value farmer-to-farmer communication because farmers have honest conversations about what is working and not working on their farms. Honest programming that speaks directly to the challenges of soil health practices and strategies for managing risk will have more credibility and offer more holistic, realistic, and identifiable pathways into soil health management.

Farmer-Centered Programming Connects the Dots from Inputs to Outputs to Farmer and Societal Benefits

Farmers draw connections between their soil management practices and environmental outcomes (e.g., water resource protection). Most survey respondents believe that soil management practices are important to protecting water resources. Our farmer participants also see critical and beneficial relationships among soil health, their own farm's productivity, and more broadly, regional community health.

Study findings suggest that program participants are ready to engage in better soil management. However, our study also reveals some missing pieces or gaps in soil management programming. While most survey respondents believe that they have the knowledge and skills needed to use soil health practices, fewer respondents believe that they have the financial resources or equipment needed to adopt or sustain the practices. Lack of financial resources and equipment to support soil management are perceived as significant constraints to practice adoption. Outreach and communication should directly address these perceptions and demonstrate just how farmers have navigated these constraints. One approach may be to offer farmer assistance. Cost-share programs and equipment rentals may offset real financial barriers farmers experience or reduce financial risk.

A second, and more long-term approach is to demonstrate how farmers themselves work together to support soil health and sustainable practices. The Soil Health Hubs and participants' self-described success in working together directly challenge the notion that farmers are independent and isolated. Demonstrating the success of the Soil Health Hubs would help farmers, who may feel isolated, lack confidence, or question their own capabilities, to connect the dots, build relationships, and explore alternative practices in community. The focus groups revealed that farmers participating in Soil Hubs have a tremendous collective advantage that expands their resources and builds their resilience. They set goals together, share knowledge and skills, pool and distribute resources and equipment, cooperate to influence markets, and develop a collective longer term and regional vision for success.

Farmer participants called upon LSP to support social change, at least initially at local scales to "turn the food system around" and to connect farmers, communities, and the next generation to local food crops like vegetables and perennials. Conventional farming policies are viewed as a major constraint to soil health. Farmer-centered programming can address these challenges both on the field and at the institutional levels. Participants acknowledged that commodity crops have an "unfair advantage." However, big industrial farms also lack a sense of ownership and community. Smaller sustainable farming systems have strength in their potential to connect on a human and community level regionally on issues that matter now more than ever: local economies, environmental health, drinking water quality, public health and access to healthful foods, community identity and pride, and youth development. Farmers identified growth areas for LSP and the Soil Health Hubs including: local food education about food quality, finding local markets that are profitable, supporting land access and financial programs for new farmers, outreach to farmland owners about benefits of prioritizing soil health and sustainable agriculture, celebrating and connecting sustainable farm operations and farmers in local communities.

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Appendix A: Survey Questionnaire

ID# _____

Your opinions are valuable to us. This survey is **voluntary and completely confidential**. Your information will not be linked to identifying information and will be combined with other farmers' responses for summary reports.

Please answer the questions as completely as possible in relation to all the farmland that you make management decisions about, whether you own the land, rent it, or manage the farmland for someone else. It should take you about 10 minutes to complete the survey. Please complete the survey, fold it in thirds, and mail it back in the enclosed self-addressed stamped envelope.

If you complete the survey, you will be entered into a drawing to win one of ten $75 gift certificates from one of our supporting businesses, Albert Lea Seed Brand Store, Patagonia, or Johny's Seeds.

Thank you for taking the time to answer questions about soil health and management. Results will be available at LSP's Soil Builder's Network Web Page, https://landstewardshipproject.org/soil-health/soil-builders-network/

I. You and Your Farm

First, we have some general questions about you and the land you farm.

1. Did you own, rent, or manage any land used for farming in 2023?

☐ Yes (*Please complete the survey*)

☐ No (*Please discontinue and return the survey in the enclosed envelope*)

2. In 2023, approximately how many total acres of this farmland were in the following categories?

Land I owned and managed	Land I rented from others	Land I rented to others	Land I professionally managed for others
_____ acres	_____ acres	_____acres	_____ acres

3. In 2023, of the farmland you own/rent/manage, about how many acres were in the following?

a. Corn	_____acres
b. Soybeans	_____acres
c. Small grains (wheat, oats, sorghum, etc.)	_____acres
d. Fruit and/or vegetable production	_____acres
e. Pasture and/or hay production	_____acres
f. Other: _____	_____acres

II. Soil Health and Management Practices

Next, we have a few questions about soil health and management on the land you farm.

4. Since 2023, have you used any of these soil management practices on the land you farm? Please consider the categories below for each practice and check one box in each row. If you are using a practice now, please let us know how many acres are in the practice now and how many acres you have moved into this practice since January 2023.

	Not familiar with practice	Familiar with but not using practice	Using practice in some possible locations	Using practice in all possible locations	If using practice, about how many acres are in this practice currently?	About how many acres have you moved into this practice since Jan. 2023?
a. Conservation tillage including reduced tillage, strip tillage or switching from moldboard plow to disc	☐	☐	☐	☐	_____ acres	_____ acres
b. Cover crops	☐	☐	☐	☐	_____ acres	_____ acres
c. Diversified rotations (more than corn and soybeans)	☐	☐	☐	☐	_____ acres	_____ acres
d. Rotational grazing (i.e., grazing approaches that optimize stocking rates, livestock rotations, utilization rates and plant rest and recovery)	☐	☐	☐	☐	_____ acres	_____ acres
e. Fall -only application of nitrogen fertilizer	☐	☐	☐	☐	_____ acres	_____ acres

Please consider these specific soil health management practices when answering the following questions: cover crops, conservation tillage, diversified rotations (e.g., including small grains or perennials) and rotational grazing

5. To what extent do you agree or disagree with the following statements? *(Check one box in each row)*

I would be more likely to add more acres to existing soil health practice or practices in the future if…	**Strongly disagree**	**Somewhat disagree**	**Neither agree nor disagree**	**Somewhat agree**	**Strongly agree**
a. A conservation professional or agronomist would discuss the practice with me.	☐	☐	☐	☐	☐
b. I knew more about how to implement and maintain the practice.	☐	☐	☐	☐	☐
c. I could learn about these activities on my own (e.g. YouTube, self-directed learning content).	☐	☐	☐	☐	☐
d. I had help with the physical labor of implementing and maintaining the practice.	☐	☐	☐	☐	☐
e. I could rent equipment for the practice.	☐	☐	☐	☐	☐
f. I could see successful examples of the practice	☐	☐	☐	☐	☐
g. I could attend a workshop or field day on the practice.	☐	☐	☐	☐	☐
h. I could talk to other farmers who are using the practice.	☐	☐	☐	☐	☐
i. My neighbors used the practice.	☐	☐	☐	☐	☐
j. I could participate in a farmer network/group about the practice	☐	☐	☐	☐	☐
k. I could be enrolled in a program that recognizes local producers using the practice.	☐	☐	☐	☐	☐
l. I had evidence that the practice improved soil health.	☐	☐	☐	☐	☐
m. I knew more about the water resource benefits of the practice.	☐	☐	☐	☐	☐
n. I had evidence that the practice did not reduce crop yield.	☐	☐	☐	☐	☐
o. I had evidence that it would improve my financial bottom line.	☐	☐	☐	☐	☐
p. I was compensated for any lost crop production because of the practice.	☐	☐	☐	☐	☐
q. I had access to financial resources to help me with the practice.	☐	☐	☐	☐	☐
r. There were regulations that mandated using the practice.	☐	☐	☐	☐	☐
s. I had help navigating funding opportunities.	☐	☐	☐	☐	☐
t. Incentive programs for the practice were more flexible.	☐	☐	☐	☐	☐
u. Larger crop insurance discounts were tied to the use of soil health management practices.	☐	☐	☐	☐	☐

Please consider these specific soil health management practices when answering the following questions: cover crops, conservation tillage, diversified rotations (e.g., including small grains or perennials) and rotational grazing

6. To what extent do you agree or disagree with the following statements? *(Check one box in 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 soil management practices on the land.	☐	☐	☐	☐	☐
b. I have the financial resources I need to use soil management practices on the land.	☐	☐	☐	☐	☐
c. I have the equipment I need to use soil management practices.	☐	☐	☐	☐	☐
d. Most of what happens on my farm/land is beyond my control.	☐	☐	☐	☐	☐
e. What I do on my farm/land makes a difference in the water quality in my region.	☐	☐	☐	☐	☐
f. It is my personal responsibility to make sure that what I do on my farm/land does not contribute to water pollution.	☐	☐	☐	☐	☐
g. The weather is so variable that it is difficult to make decisions on the land I farm.	☐	☐	☐	☐	☐
h. People who are important to me expect me to use soil management practices on my farm/land.	☐	☐	☐	☐	☐

7. To what extent do you agree or disagree with the following statements? *(Check one box in each row)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. When I need assistance with something on my farm/land, I often find it difficult to get others to help.	☐	☐	☐	☐	☐
b. I can usually achieve what I want on my farm/land when I work hard for it.	☐	☐	☐	☐	☐
c. I do not have the time to use soil management practices.	☐	☐	☐	☐	☐
d. Soil management practices are critical to the productivity of my farm/land.	☐	☐	☐	☐	☐
e. Soil management practices are critical to farming in my region.	☐	☐	☐	☐	☐
f. Healthy soils help farmers become more resilient to changes in weather patterns.	☐	☐	☐	☐	☐
g. Soil management practices are critical to protecting water resources in my region.	☐	☐	☐	☐	☐
h. Farmers in my community have the ability to work together to support soil management practices.	☐	☐	☐	☐	☐
i. There is nothing that we can do to keep the costs of farming from going up.	☐	☐	☐	☐	☐

8. To what extent do you agree or disagree with the following statements? *(Check one box in each row)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. It is important that farm landowners, managers, and renters share information on conservation.	☐	☐	☐	☐	☐
b. It is important that farm landowners, managers, and renters share information on soil health.	☐	☐	☐	☐	☐
c. My neighboring farmers support each other (e.g., share knowledge or resources).	☐	☐	☐	☐	☐
d. My community has the leadership it needs to support sustainable farming practices.	☐	☐	☐	☐	☐
e. It is difficult for us to have much control over policies that affect our farms/lands.	☐	☐	☐	☐	☐

III. Your Engagement in the Land Stewardship Project's Soil Health Program

The next set of questions is related specifically to the **Land Stewardship Project's (LSP) Soil Health Program**. Please consider that program when answering the questions

9. Overall, how satisfied are you with LSP's Soil Health Program?

☐ Very dissatisfied ☐ Somewhat dissatisfied ☐ Neither satisfied nor dissatisfied ☐ Somewhat satisfied ☐ Very satisfied

10. How important were the following factors in your decision to participate in the LSP's Soil Health Program? *(Check one box in each row)*

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
a. Protecting or increasing the productivity of my land	☐	☐	☐	☐	☐
b. Making sure the land stays in the family for the next generation	☐	☐	☐	☐	☐
c. Improving soil health	☐	☐	☐	☐	☐
d. Protecting or improving water resources	☐	☐	☐	☐	☐
e. Protecting or improving wildlife habitat	☐	☐	☐	☐	☐
f. Increasing long-term profitability of my farm	☐	☐	☐	☐	☐
g. Increasing yield	☐	☐	☐	☐	☐
h. My ability to cash flow soil management choices	☐	☐	☐	☐	☐
i. Availability of financial assistance/cost share	☐	☐	☐	☐	☐
j. Encouragement of friends and family members	☐	☐	☐	☐	☐
k. My emotional connection to the land	☐	☐	☐	☐	☐
l. Conservation is a part of who I am	☐	☐	☐	☐	☐

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

LSP's Soil Health Program…	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. has influenced my farming decisions	☐	☐	☐	☐	☐
b. has enhanced my knowledge of healthy soils	☐	☐	☐	☐	☐
c. has enhanced my knowledge of soil management practices	☐	☐	☐	☐	☐
d. has improved my skills in soil management	☐	☐	☐	☐	☐
e. has increased my confidence in soil management	☐	☐	☐	☐	☐
f. has improved soil health on my farm/land	☐	☐	☐	☐	☐
g. has increased my concern about water pollution	☐	☐	☐	☐	☐
h. has inspired me to work with others on soil health management	☐	☐	☐	☐	☐
i. has inspired me to use conservation practices in the future	☐	☐	☐	☐	☐
j. has been worth the time and effort needed to participate	☐	☐	☐	☐	☐
k. reflects my environmental ethic	☐	☐	☐	☐	☐
l. represents diverse farmers and farm types	☐	☐	☐	☐	☐
m. is important to conservation in Minnesota	☐	☐	☐	☐	☐

IV. Influence on Your Farm Management Decisions

Now, we have a few questions about the people that influence you and your decisions about soil management practices. Much of Minnesota's farmland is rented from others. The following questions are about rented land.

12. On the cropland you farm, who makes decisions about soil management? *(Check one in each column)*

	Decisions about crop production		Decisions about soil management	
	Owned land	Rented land	Owned land	Rented land
I make my own decisions	☐	☐	☐	☐
I leave it up to the landowner		☐		☐
I work with the landowner		☐		☐
My land manager / agronomist / advisor	☐	☐	☐	☐

13. How much influence do the following individuals or groups have on your decisions about soil management practices on the land you farm? *(Check one in each row)*

	No influence	Small amount	Moderate amount	Large amount	Extreme amount
a. My family	☐	☐	☐	☐	☐
b. My neighbors	☐	☐	☐	☐	☐
c. Other farmers (in-person)	☐	☐	☐	☐	☐
d. Other farmers on social media / online	☐	☐	☐	☐	☐
e. My county's Soil and Water Conservation District	☐	☐	☐	☐	☐
f. Financial institutions (ag banker, financial advisor)	☐	☐	☐	☐	☐
g. University Extension and research	☐	☐	☐	☐	☐
h. State of Minnesota departments (Dept of Ag, Dept of Natural Resources)	☐	☐	☐	☐	☐
i. Federal-level departments (USDA Farm Service Agency, NRCS)	☐	☐	☐	☐	☐
j. Agricultural commodity associations	☐	☐	☐	☐	☐
k. Seed / input dealer	☐	☐	☐	☐	☐
l. Agronomist / crop advisor	☐	☐	☐	☐	☐
m. Machinery and implement manufacturers/dealers	☐	☐	☐	☐	☐
n. Farm press (magazines, radio, TV, and website focused on agriculture)	☐	☐	☐	☐	☐
o. LSP's Soil Health Program	☐	☐	☐	☐	☐

V. Information about You

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 questions are confidential and will only be used in aggregate.

14. What is your age? _____years ☐ Prefer not to respond

15. Are you… ☐ Male ☐ Female ☐ Non-binary/gender non-conforming
☐ Prefer not to respond

16. Including sales of crops, livestock, poultry, miscellaneous agricultural products, and government agricultural payments in 2023, which category represents the yearly total gross value of sales from your farm? *(Please check one)*

☐ Less than $2,500
☐ $2,500 to $4,999
☐ $5,000 to $9,999
☐ $$10,000 to $24,999
☐ $25,000 to $49,999
☐ $50,000 to $99,999
☐ $100,000 to $149,999
☐ $150,000 to $199,999
☐ $200,000 to $299,999
☐ $300,000 to $399,999
☐ $400,000 to $499,999
☐ $500,000 to $749,999
☐ $750,000 to $999,999
☐ $1,000,000 or more
☐ Prefer not to respond

17. What category best describes you? *(Please check all that apply)*

☐ **White**
For example, German, Irish, English, Italian, Polish, French, Swedish, Norwegian, etc.

☐ **Hispanic, Latino, or Spanish heritage**
For example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, etc.

☐ **Black or African American**
For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.

☐ **Asian**
For example, Chinese, Filipino, Asian Indian, Vietnamese, Hmong, Korean, Japanese, etc.

☐ **American Indian or Alaska Native**
For example, Anishinaabe, Dakota (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.

☐ **Some other race, ethnicity or heritage (Please specify):** _____

☐ Prefer not to respond

18. Do you have any other comments about soil health management or this questionnaire?

Thank you for your help!

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

Appendix B: Survey Cover Letter

[Date]

Dear [FirstName] [LastName]:

Land Stewardship Project staff and partners are asking for your help in a study about soil health practices and farmer networks. The study is being conducted by Dr. Mae Davenport and Dr. Amit Pradhananga from the University of Minnesota, in coordination with the Land Stewardship Project (LSP). The purpose of this study is to better understand farmers' perspectives about soil health and LSP's Soil Health Program. Findings from this study will be used to support programing to strengthen farmer networks and increase community impacts. This survey is a follow-up from a 2022 survey and continues our effort to gather feedback regularly from farmers.

We are contacting you because you are currently participating in or have expressed interest in LSP's Soil Health Program. We really appreciate you taking the time to help us with this study. It should take about 10 minutes to complete the questionnaire. This survey is voluntary and completely confidential. The ID # on the front page of your survey is used to help us track mailings, ensuring 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.**

If you complete the survey, you will be entered into a drawing to win one of ten $75 gift certificates from one of our supporting businesses, Albert Lea Seed Brand Store, Patagonia, or Johny's Seeds.

Please feel free to contact us by phone at 612-624-6726, or by email at prad0047@umn.edu if you have any questions. We hope you enjoy completing the questionnaire and we look forward to receiving your response.

Sincerely,

Mae Davenport, Professor
University of Minnesota

Alex Romano
Land Stewardship Project

Appendix C: Focus Group Script

Focus Group Draft Outline (updated)

Plainview 2/6, 5:00 - 7:30 (Board Room at the Foresight Bank located at 138 W Broadway, Plainview MN 55964)

Austin 2/13, 5:00 - 7:30 (Austin Public Library located at 323 4th Ave NE, Austin MN 55912)

6:00pm, 60 minutes, 12-15 people

Shea-Lynn - 651.301.1897, Alex Romano - 641-220-6000

Welcome and Team Introductions: Mae, Amit and Jasmine

Study Overview:

6:00 (Start)

The goal of this soil health assessment study is to examine the impacts the Land Stewardship Project's (LSP) soil health program has had in southeast Minnesota and to set the stage for future programming. Thank you for joining us in this conversation!

This focus group is one of two we are holding with LSP Soil Hubs. Our plan today is to facilitate a discussion about soil health through an open discussion and to go a little deeper on some topics that are important to you. We ask that you share freely and listen respectively to your peers. This is a group discussion and there are no right or wrong answers. My job will be to keep us on track and on time for our 60-minute conversation. We will be taking notes from the session, so that we can document what's said, but your names or personal details will not be linked to what you say. In other words, we will report out on what farmers in Focus Group 1 said, not what any specific participant said. You all have signed a consent form. As a reminder, feel free to "pass" on any questions we ask.

1. First, I'll ask you to go around one at a time and introduce yourself and then and then share one thing that **initially drew you to joining the soil health hub and one thing that keeps you involved now.** Two or three sentences would be excellent.

+10 min

2. Now, an open question for you. **What changes have you made on your farm that feel really meaningful or have made a big difference?**

+20 min

3. **What do you see as the biggest constraints or challenges to soil health on your farm or in your farming community?** [Idea listing on flipchart]

a. Challenges in maintaining practices over time?
b. Concern about risks? Uncertainty?

+35 min

4. We are interested in learning more about how farmers measure success. **What are indicators of success to you? What does success look like?** [Idea listing on flipchart]

a. Has the LSP soil hub contributed to your success? In what ways?

+45 min

5. **What should the role of the Land Stewardship Project be in supporting farmers in the future?** [Idea listing on flipchart]

a. What programs should be maintained?
b. What programs should change?
c. What would make the biggest difference for you?
d. Where are the biggest needs in your community?

Closing. Thank you very much for your participation. We will share results with LSP and soil hubs this summer.

+60 min (7:00 *End*)

Appendix D: Survey Findings Tables

Table 1. Number of respondents by state

	N	Percent
Minnesota	365	68.7
Out of State	166	31.3
WI	66	12.4
IA	62	11.7
IL	5	0.9
ND	4	0.8
SD	4	0.8
IN	3	0.6
WA	3	0.6
CO	2	0.4
KS	2	0.4
MI	2	0.4
OH	2	0.4
AR	1	0.2
CA	1	0.2
DE	1	0.2
FL	1	0.2
LA	1	0.2
MT	1	0.2
NC	1	0.2
NE	1	0.2
NY	1	0.2
TX	1	0.2
VA	1	0.2

Table 2. Respondents' sociodemographic characteristics

Socio-Demographic Characteristics		N	Percent
Gender	Male	354	74.2
	Female	119	24.9
	Non-binary/gender non-conforming	4	0.8
Race*	White	438	96.9
	American Indian or Alaska Native	7	1.5
	Hispanic, Latino, or Spanish heritage	3	0.7
	Black or African American	4	0.9
	Middle Eastern or North African	2	0.4
	Asian	1	0.2
	Native Hawaiian or other Pacific Islander	1	0.2
	Some other race, ethnicity or heritage (e.g., American, human)	9	2.0
Age	Median	60	-
	18 to 29	7	1.5
	30s	56	11.9
	40s	81	17.3
	50s	79	16.8
	60s	108	23.0
	70s	103	22.0
	80+	35	7.5

Source: Soil Health Survey, Land Stewardship Project, 2025, Questions 14, 15, and 17
*Respondents could give more than one response.

Table 3. Respondents' property characteristics

Property Characteristics		N	Percent
Land tenure*	Land owned and managed	418	82.4%
	Land rented from others	229	45.2%
	Land rented to others	123	24.3%
	Land professionally managed for others	37	7.3%
	Land owned and managed, and rented from others	152	28.1%
	Land owned and managed, and rented to others	69	12.8%
	Land owned and managed, and professionally managed	8	1.5%
Farm size	0 to 9 acres	39	8.1%
	>9 to 49 acres	83	17.3%
	>49 to 179 acres	117	24.4%
	>179 to 499 acres	136	28.4%
	>499 to 999 acres	65	13.6%
	1000 acres or more	39	8.1%
	Less than $2,500	39	8.1%
	$2,500 to $4,999	83	17.3%
Yearly gross value of sales from farm	$5,000 to $9,999	38	8.7%
	$10,000 to $24,999	18	4.1%
	$25,000 to $49,999	27	6.2%
	$50,000 to $99,999	47	10.8%
	$100,000 to $149,999	58	13.3%
	$150,000 to $199,999	65	14.9%
	$200,000 to $299,999	41	9.4%
	$300,000 to $399,999	29	6.6%
	$400,000 to $499,999	26	5.9%
	$500,000 to $749,999	26	5.9%
	$750,000 to $999,999	16	3.7%
	$1,000,000 or more	14	3.2%

Source: Soil Health Survey, Land Stewardship Project, 2025, Questions 1 and 16
*Respondents could give more than one response

Table 4. Respondents' decision making about crop production and soil management on land they own and rent

	Decisions about crop production				Decisions about soil management			
	Owned land		Rented land		Owned land		Rented land	
	N	%	N	%	N	%	N	%
I make my own decisions	409	94.5	270	80.6	397	94.5	258	76.3
I leave it up to the landowner	NA	NA	6	1.8	NA	NA	8	2.4
I work with the landowner	NA	NA	39	11.6	NA	NA	49	14.5
My land manager / agronomist / advisor	24	5.5	20	6.0	23	5.5	23	6.8

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 12

Table 5. Respondents' current use of soil management practices

	Extent of practice use					Acres in practice currently	
	N	Not familiar with practice[a]	Familiar with but not using practice	Using practice in some possible locations	Using practice in all possible locations	Average acres in practice	Total acres in practice
Conservation tillage including reduced tillage, strip tillage or switching from moldboard plow to disc	429	3.7	27.7	18.2	50.3	286.7	76,264.8
Cover crops	431	0.9	23.0	35.5	40.6	202.7	60,612.4
Diversified rotations (more than corn and soybeans)	398	3.3	39.4	19.6	37.7	228.4	45,229.8
Rotational grazing (i.e., grazing approaches that optimize stocking rates, livestock rotations, utilization rates and plant rest and recovery)	405	3.2	41.5	16.3	39.0	214.1	41,111.4
Fall -only application of nitrogen fertilizer	372	19.9	64.5	10.2	5.4	190.6	7,053.6

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 4

[a]Percent

Table 6. Respondents' current use of soil management practices

	2024/25 survey (added practices since Jan 2023)				2022 survey (added practices since Jan 2020)			
	n	%	Average	Total	n	%	Average	Total
Conservation tillage including reduced tillage, strip tillage or switching from moldboard plow to disc	22	8.0%	217.2	4,778	67	47.5%	207.3	13,887
Cover crops	38	13.8%	133.8	5,086	63	44.7%	136.9	8,626
Diversified rotations (more than corn and soybeans)	21	7.6%	104.6	2,196			NA	
Rotational grazing (i.e., grazing approaches that optimize stocking rates, livestock rotations, utilization rates and plant rest and recovery)	27	9.8%	385.5	10,409	44	31.2%	77.6	3,415
Fall -only application of nitrogen fertilizer	1	0.4%	195.0	195			NA	
Total acres added of conservation practices				**22,469**				**25,928**

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 4; Data about additional acres for practices in 2022 from survey conducted by the Land Stewardship Project

Table 7. Respondents' satisfaction with Land Stewardship Project's Soil Health Program

Response	
N	473
Mean	3.77
SD	0.82
Very dissatisfied	0.2%
Somewhat dissatisfied	3.0%
Neither satisfied nor dissatisfied	37.0%
Somewhat satisfied	38.9%
Very satisfied	20.9%

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 9

Table 8. Respondents' perspectives about the Land Stewardship Project's Soil Health Program

LSP's Soil Health Program…	N	Mean*	SD	Strongly disagree[a]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
is important to conservation in Minnesota	447	4.13	0.88	1.6	0.9	21.3	36.0	40.3
reflects my environmental ethic	451	4.08	0.91	1.8	2.2	20.4	37.3	38.4
has inspired me to use conservation practices in the future	448	3.85	0.84	1.6	2.2	27.9	46.0	22.3
has enhanced my knowledge of healthy soils	451	3.85	0.87	2.2	3.1	24.2	48.6	22.0
has enhanced my knowledge of soil management practices	449	3.83	0.80	1.1	2.4	28.3	49.0	19.2
has been worth the time and effort needed to participate	450	3.76	0.88	1.1	4.4	34.0	38.7	21.8
represents diverse farmers and farm types	447	3.75	0.87	1.3	3.8	34.0	40.3	20.6
has increased my concern about water pollution	449	3.73	0.91	2.0	3.8	34.5	38.3	21.4
has increased my confidence in soil management	451	3.68	0.85	1.6	4.4	35.3	42.4	16.4
has improved my skills in soil management	451	3.62	0.85	1.8	4.7	37.9	41.5	14.2
has influenced my farming decisions	449	3.61	0.89	2.7	5.1	35.2	43.0	14.0
has improved soil health on my farm/land	448	3.61	0.90	2.2	4.9	39.7	36.4	16.7
has inspired me to work with others on soil health management	449	3.57	0.91	2.2	6.5	39.6	35.9	15.8

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 11

*Responses based on a 5-point scale from strongly disagree (1) to strongly agree (5); SD=Standard deviation

[a] Percent

Table 9. Respondents' motivations to participate in the Land Stewardship Project's Soil Health Program

	N	Mean*	SD	Not at all important[a]	Slightly important	Moderately important	Very important	Extremely important
Improving soil health	461	4.38	0.79	0.9	1.7	8.7	35.8	52.9
Conservation is a part of who I am	462	4.27	0.91	1.9	2.6	11.7	33.5	50.2
Protecting or improving water resources	462	4.26	0.87	1.1	3.2	11.9	36.1	47.6
Increasing long-term profitability of my farm	460	4.05	1.00	2.4	5.2	18.0	33.9	40.4
My emotional connection to the land	462	4.01	1.03	3.0	5.8	16.9	35.5	38.7
Protecting or increasing the productivity of my land	462	3.98	0.97	1.9	5.8	18.2	40.0	34.0
Protecting or improving wildlife habitat	461	3.86	1.10	3.9	7.8	21.7	31.2	35.4
My ability to cash flow soil management choices	461	3.67	1.12	6.1	8.5	23.2	37.3	24.9
Making sure the land stays in the family for the next generation	463	3.58	1.36	11.4	12.5	16.4	25.9	33.7
Increasing yield	460	3.50	1.12	6.1	10.9	31.1	30.7	21.3
Availability of financial assistance/cost share	459	3.31	1.29	12.4	13.5	25.5	27.7	20.9
Encouragement of friends and family members	459	3.05	1.28	16.3	16.8	26.4	27.0	13.5

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 10

*Responses based on a 5-point scale from not at all important (1) to extremely important (5); SD=Standard deviation; [a] Percent

Table 10. Respondents' views about factors that would enhance their use of soil health practices

I would be more likely to add more acres to existing soil health practice or practices in the future if…	N	Mean*	SD	Strongly disagree[a]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I could talk to other farmers who are using the practice.	485	3.96	0.94	2.5	2.9	22.7	40.2	31.8
I had evidence that the practice improved soil health.	480	3.95	1.04	4.4	3.1	20.4	37.1	35.0
I could see successful examples of the practice	483	3.93	0.99	2.9	4.1	22.4	37.9	32.7
I had evidence that it would improve my financial bottom line.	479	3.92	1.04	3.1	4.6	25.5	30.7	36.1
I could attend a workshop or field day on the practice.	480	3.85	0.91	2.3	3.3	26.0	44.2	24.2
Incentive programs for the practice were more flexible.	483	3.77	1.04	4.8	4.6	26.3	37.7	26.7
I had access to financial resources to help me with the practice.	484	3.77	1.12	6.0	6.2	21.9	37.0	28.9
I knew more about how to implement and maintain the practice.	486	3.73	0.99	3.9	5.6	25.7	43.2	21.6
I could rent equipment for the practice.	484	3.67	1.05	4.8	6.4	29.8	35.5	23.6
I had help navigating funding opportunities.	485	3.66	1.12	6.8	5.8	27.2	35.3	24.9
I could participate in a farmer network/group about the practice	481	3.62	0.94	3.3	5.2	34.7	39.5	17.3
I knew more about the water resource benefits of the practice.	478	3.62	1.01	5.0	4.8	32.2	39.1	18.8
I had evidence that the practice did not reduce crop yield.	477	3.61	1.09	5.2	7.3	32.3	31.2	23.9
I could learn about these activities on my own (e.g. YouTube, self-directed learning content).	484	3.58	0.98	3.9	7.2	32.2	40.1	16.5
A conservation professional or agronomist would discuss the practice with me.	485	3.53	1.05	6.2	6.4	32.8	37.3	17.3
Larger crop insurance discounts were tied to the use of soil health management practices.	485	3.51	1.25	9.5	8.0	34.0	19.2	29.3
I had help with the physical labor of implementing and maintaining the practice.	486	3.49	1.12	6.8	10.1	29.6	34.0	19.5
I could be enrolled in a program that recognizes local producers using the practice.	484	3.48	1.03	5.0	9.1	35.5	34.3	16.1
I was compensated for any lost crop production because of the practice.	486	3.42	1.17	9.5	7.2	35.8	26.5	21.0
My neighbors used the practice.	481	3.14	1.15	12.5	10.2	41.6	22.9	12.9
There were regulations that mandated using the practice.	483	2.90	1.29	20.9	13.7	32.3	21.1	12.0

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 5; [a]Percent

Table 11. Respondents' beliefs about soil management practices

	N	Mean*	SD	Strongly disagree[a]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Soil management practices are critical to protecting water resources in my region.	501	4.65	0.66	1.0	0.6	2.4	24.4	71.7
Healthy soils help farmers become more resilient to changes in weather patterns.	500	4.62	0.69	1.0	0.2	5.0	23.8	70.0
Soil management practices are critical to the productivity of my farm/land.	500	4.50	0.73	0.4	1.4	7.2	29.6	61.4
Soil management practices are critical to farming in my region.	499	4.36	0.89	1.6	2.6	10.8	27.9	57.1
People who are important to me expect me to use soil management practices on my farm/land	498	3.76	1.09	3.8	8.6	24.7	33.1	29.7

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 7

*Responses based on a 5-point scale from strongly disagree (1) to strongly agree (5); SD=Standard deviation

[a] Percent

Table 12. Respondents' beliefs about their responsibility and ability to protect water resources

	N	Mean*	SD	Strongly disagree[a]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Responsibility								
It is my personal responsibility to make sure that what I do on my farm/land does not contribute to water pollution	502	4.63	0.76	1.8	0.8	4.2	19.5	73.7
It is important that farm landowners, managers, and renters share information on soil health	503	4.48	0.66	0.0	0.8	6.8	36.2	56.3
It is important that farm landowners, managers, and renters share information on conservation	502	4.47	0.67	0.2	1.0	5.6	38.4	54.8
Individual and community ability								
What I do on my farm/land makes a difference in the water quality in my region	502	4.47	0.81	1.8	1.4	5.4	30.5	61.0
I have the knowledge and skills I need to use soil management practices on the land	500	3.99	0.89	1.0	8.2	9.6	53.0	28.2
Farmers in my community have the ability to work together to support soil management practices	499	3.38	1.08	6.4	12.0	33.3	33.7	14.6
I have the financial resources I need to use soil management practices on the land	498	3.37	1.15	6.6	20.3	17.1	41.4	14.7
I have the equipment I need to use soil management practices	496	3.16	1.23	9.9	26.0	14.9	36.3	12.9
My neighboring farmers support each other (e.g., share knowledge or resources)	499	3.06	1.07	8.6	20.8	33.3	30.1	7.2
My community has the leadership it needs to support sustainable farming practices	500	2.73	1.09	13.6	30.2	30.8	20.4	5.0
I do not have the time to use soil management practices	498	2.01	1.05	38.8	34.9	14.7	9.8	1.8

Source: Soil Health Survey, Land Stewardship Project, 2025, Questions 6, 7, and 8

*Responses based on a 5-point scale from strongly disagree (1) to strongly agree (5); SD=Standard deviation

[a] Percent

Table 13. Respondents' beliefs about farming

	N	Mean*	SD	Strongly disagree[a]	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I can usually achieve what I want on my farm/land when I work hard for it	498	3.88	0.86	0.4	8.2	16.5	53.2	21.7
It is difficult for us to have much control over policies that affect our farms/lands	502	3.45	1.10	5.4	17.5	18.5	44.0	14.5
When I need assistance with something on my farm/land, I often find it difficult to get others to help	498	3.03	1.07	8.8	23.1	31.1	30.3	6.6
The weather is so variable that it is difficult to make decisions on the land I farm	499	3.02	1.20	13.4	21.4	23.6	32.7	8.8
There is nothing that we can do to keep the costs of farming from going up	500	2.67	1.16	16.0	35.8	19.2	23.6	5.4
Most of what happens on my farm/land is beyond my control	501	1.96	1.08	43.9	30.9	13.2	9.6	2.4

Source: Soil Health Survey, Land Stewardship Project, 2025, Questions 6, 7, and 8

*Responses based on a 5-point scale from strongly disagree (1) to strongly agree (5); SD=Standard deviation

[a] Percent

Table 14. Respondents' reported level of influence of individuals or groups on their decisions about soil management practices on the land they farm

	N	Mean*	SD	No influence[a]	Small influence	Moderate amount	Large amount	Extreme amount
My family	472	2.84	1.22	18.4	20.8	27.5	25.2	8.1
Other farmers (in-person)	470	2.59	1.06	16.6	31.9	31.1	16.8	3.6
Federal-level departments	472	2.58	1.14	20.3	29.2	26.7	19.7	4.0
LSP's Soil Health Program	464	2.58	1.03	15.5	33.0	32.8	15.7	3.0
University Extension and research	473	2.55	1.05	18.8	28.3	34.0	16.3	2.5
My county's Soil and Water Conservation District	470	2.49	1.14	23.2	29.1	28.3	14.3	5.1
Farm press (magazines, radio, TV, and website focused on agriculture)	472	2.24	0.97	24.6	38.1	28.6	6.4	2.3
Other farmers on social media / online	469	2.23	1.08	30.9	30.9	25.4	10.0	2.8
State of Minnesota departments	470	2.09	1.07	38.9	26.6	23.0	10.0	1.5
Agronomist / crop advisor	469	2.04	1.18	46.5	20.5	18.3	11.5	3.2
My neighbors	474	1.90	0.97	43.0	31.4	18.8	5.7	1.1
Seed / input dealer	471	1.85	1.02	49.0	26.5	15.9	7.0	1.5
Financial institutions	471	1.58	0.91	64.1	18.9	13.2	2.3	1.5
Agricultural commodity associations	466	1.57	0.88	63.3	21.2	11.2	3.6	60.0
Machinery and implement manufacturers/dealers	470	1.50	0.81	66.2	20.6	10.4	2.3	0.4

Source: Soil Health Survey, Land Stewardship Project, 2025, Question 13

*Responses based on a 5-point scale from no influence (1) to extreme amount (5); SD=Standard deviation

[a] Percent