Connecting Conservation:

Identifying Farmer Networks in the Great Lakes States

Executive Summary

Farmers are valuable sources of information and social support for other farmers when it comes to managing their operations. This is especially evident for farmer use of conservation agriculture systems, the adoption of which will be critical to ensuring clean water, functioning terrestrial and aquatic ecosystems, and climate change-resilient rural landscapes.

This report details insights about the location, extent, and needs of farmer-centered conservation networks across the Great Lakes basin. Through key informant interviews with regional organizations with experience engaging farmer networks, desktop research of existing networks, and surveys of conservation organizations and networks across the Great Lakes states, we have identified over **130 groups** that support farmer-centered conservation agriculture.

An important insight from this work is the diversity in funding and leadership among networks; while a number are farmer-led, over half are led primarily by other organizations, including government agencies or non-profits. Farmer networks are not equally distributed across the region; Wisconsin had the largest number of identified networks, in large part due to a state-run program to support farmer-led conservation efforts. Networks have a range of goals, most commonly focusing on broad outcomes, including water quality and soil health, rather than individual practices. Farmer networks are also not solely focused on conservation goals, including social and economic outcomes as network goals as well. Perhaps unsurprisingly, these networks are most often made up of innovative or early adopter farmers with high interest in conservation agriculture, yet a large number also focus on reaching non-adopters through field days and demonstrations.

To expand the impact of farmer networks, it is critical to understand both their current capacities as well as future needs. While networks partner with a broad array of organizations and receive funding from diverse sources, funding and flexibility are both the greatest areas of need for networks. Leadership and outreach trainings are also needed areas of support. The Wisconsin farmer-led watershed program may serve as a model for other states to provide this type of funding and capacity support for farmer networks. While networks most often focus on broad outcomes and utilize a range of success metrics, this project did not explore long-term impacts of these networks and this is a key area for future research.

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Introduction

Farmers are valuable sources of information and social support for other farmers when it comes to managing their operations. This is especially evident for farmer use of conservation agriculture systems, the adoption of which will be critical to ensuring clean water, functioning terrestrial and aquatic ecosystems, and climate change-resilient rural landscapes.

Farmer decisions to adopt conservation agriculture systems such as cover crops, no-till, and nutrient management are impacted by a variety of factors and influences. These include farmer age, number of years farming, personal beliefs, and involvement in farmer-centered networks[1,2,3]. Research on what influences conservation decisions shows that participation in farmer-centered networks positively influences farmers adoption of these practices[1,2,3,4,5].

Studies have shown that farmers who are involved in and receive support from farmer networks have greater concern for the environment, are more likely to implement sustainable practices, and foster shared conservation goals[1,2,6,7]. A series of focus groups conducted among farmer network participants in Iowa indicated that being a part of a network and having support allowed them to be comfortable trying new methods of cover crop implementation[8]. Similarly, a study of grain farmers and rotational graziers in the Upper Mississippi River Basin region in Iowa found that participation in farmer networks and peer knowledge sharing was a crucial part of transitioning to sustainable practices and contributed to forming a community of ecologically minded farmers[7]. Pape and Prokopy (2017) found in a study of both network and non-network farmers in Indiana, network farmers use more conservation practices on their land and show greater concern for water quality and pollution[1]. A systematic review of qualitative studies of conservation practices and program adoption in the United States also found that farmers value the opportunity to network with other producers and discuss insights gained from implementing best management practices[9]. These studies all contribute to the understanding that farmer networks allow for meaningful peer learning opportunities about ways to implement new practices, opportunities to give and receive advice, and networking with other producers in the area.

While the current research on farmer networks has demonstrated their importance in increasing adoption of conservation agriculture systems, this body of literature

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is still new, and many knowledge gaps exist. Further research is needed to understand the characteristics of networks, including their location, what support they need, what type of farmers they serve, how they define success, and more. An important characteristic to identify in farmer networks is what type of farmers they are reaching. A study on two farmer networks in Indiana found that the networks were primarily comprised of innovators and early adopters[1]. More information on additional networks is needed to understand if farmer networks are also reaching middle and late adopter farmers. Gathering this information about networks and understanding their structure will help provide crucial information to craft effective support[10]. Studies acknowledge that other farmer networks exist in different areas and note that research and evaluation of these additional networks is needed to increase understanding of farmer networks and their influence[1,5]. In addition, multiple studies suggest steps that networks could take to be more successful, including increasing the number of meetings held each year, incorporating key stakeholders,

Photo Credit: Lee Tesdell

and adding new projects; however, there is a lack of information about how farmer networks define success for themselves, and what type of assistance they see as being the most helpful to reach their goals[1, 10,11]. More research is required to fill these knowledge gaps and help prioritize the importance of supporting farmer networks.

The National Wildlife Federation has supported farmer-led outreach through the Conservation Champions program since 2013. This program, along with others, have long recognized the importance of farmers as change agents in agricultural communities. Despite this awareness, there are still gaps in our collective understanding of the presence and impacts of these networks on conservation outcomes. In 2022, NWF sought to identify farmer-centered conservation networks throughout the Great Lakes states to better understand their extent, capacities, and needs to deliver actionable information and support to farmers across the region. Through a variety of data-collection methods, including interviews, desktop research, and surveys, this work has identified over 200 farmer networks, resource agencies or program supporting networks, and other types of organizations engaged in farmer-centered conservation efforts. **Among these are 133 groups that we define as farmer-centered networks. Through our efforts, we have gained valuable insights about the activities and needs of these networks, as well as some of the challenges in identifying and categorizing them.** This report details our approach and our findings, as well as lessons learned from this project.

This project focused on farmer-centered conservation networks, yet this is a more complicated focus than it first appears. We detail some of this complexity in this report, but first offer this definition of how we approached this topic. We chose to focus not just on farmer-led networks, in which farmers serve as the primary organizers and leaders, but also networks led or facilitated by non-farmers and non-farmer organizations yet serve primarily farmers. We also looked at networks that were primarily focused on conservation systems or outcomes, rather than farmer-serving organizations with select conservation-oriented programs. Lastly, farmer networks take a wide range of forms and levels of organization, from large formal organizations to informal groups of conservation-minded farmers who meet irregularly. While these informal networks may also be an important form of support for farmers using new practices, we chose to focus our project on more formal organizations.

Inventory Methods

Through individual conversations and group discussions, we identified multiple complementary projects with implications for Great Lakes conservation efforts that allowed for a better understanding of farmer networks and connected with key people and organizations and inform our research design and questions. These included researchers at Purdue University, the farmer leadership project led by the North Central Regional Water Center, and the RE-AMP network focused on advancing climate-smart agriculture policy in the Midwest. These conversations and interviews were helpful in shaping our thinking about farmer networks, how to define them, and approaches to developing an inventory.

In addition to those conversations, we also interviewed professionals from a variety of organizations, including The Nature Conservancy, the Sand County Foundation, Michigan State University Extension, Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), and the Confluence for Watershed Leaders. In conjunction with these interviews, we conducted an internet-based search for networks across the Great Lakes states. Collectively, through these efforts we identified 123 unique networks and supporting organizations of varying size and scope.

CONSERVATION ORGANIZATION SURVEY

Through collaborator conversations and key informant interviews, we identified the key characteristics of networks that served as the basis for our survey work. In autumn 2022, we developed a brief survey based on collaborator conversations and key informant interviews, as well as compiled a comprehensive contact list of conservation organizations across the Great Lakes states. This list included state resource and agricultural agencies, Natural Resource Conservation Service (NRCS) branches in each state, conservation districts, non-governmental conservation and agricultural organizations, and university extension services. This survey included questions addressing:

- the importance of networks in conservation adoption;
- network names, locations, length of existence, leadership, and focus area; and
- general questions about who engages in networks, network capacities and needs, and how networks measure success.

In winter 2022/2023, we conducted this survey in multiple rounds, beginning with a small sample of state-level organizations to pilot the survey approach, followed by additional state-level organizations, then finally local-level organizations, especially the hundreds of conservation districts in the region. In total, we surveyed 728 individuals or organizations across the study area (IN, IL, MI, MN, NY, PA, OH, WI). The survey was administered using Qualtrics, a survey software that can be completed on web browser or mobile device. We received 131 responses to our survey in total, for an overall response rate of 18%. Of these total responses, 68 surveys were completed and 63 were partially completed. We analyzed all response data, including from incomplete surveys; the final set of questions in the survey addressing the structure and needs of networks had the lowest response rate, yet the data we collected still has important insights and so we report the collective results here. The findings of this collective research effort are detailed below.

SURVEY OF FARMER NETWORKS

Following our survey of conservation organizations in winter 2022/23, we identified several additional questions about the structure, goals, and needs of farmer networks in the Great Lakes states. To address these additional questions about the networks we identified, we surveyed the 133 networks we identified through our desk research and first survey. We developed a short survey with 10 questions and administered this to network contacts in March 2023. We found contact information for 115 networks and received 25 completed responses, a 22% response rate. Given the short distribution window and cold-contact nature of this survey, we felt this was an adequate response rate from which to draw conclusions.

Photo Credit: Kankakee County (IL) Soil and Water Conservation District

Identifying Networks: Findings and Challenges

Collectively across our project efforts, we identified 210 'farmer networks' (broadly defined). These range widely in form and scope, and there was significant variation in the types of 'networks' identified through our survey. Our initial interviews and background research identified 105 unique networks, the survey identified an additional 91 unique 'networks', and 18 were identified through both efforts.

Among the networks identified through the survey, a number were not what we might have defined as a farmer-centered conservation network. We intentionally left the definition of networks somewhat broad, in part to cast a broad net and in part due to the inherent difficulties in defining networks. Defining networks is challenging for many reasons: there is wide variation in forms and structure of networks; it can be difficult to distinguish organizations that include farmers in some capacity from groups that center farmers in critical ways; and defining the extent of conservation focus within the organization. For example, many government agencies engage farmers in conservation through outreach or programs and some survey respondents included these as networks, even though these agencies are not particularly farmer-centered. Wisconsin DATCP does have a program that supports farmer-led watershed groups through funding, training, and other resources, so in that instance the agency is closer to what we might define as a farmer-centered network.

Another form of network identified through the survey were organizations that include farmers, but may not center conservation as a key aspect of their organization. This includes groups like Farm Bureau, state Farmers Union chapters, and Young Farmers Coalition. These groups likely have programs that focus on conservation, but have a wide range of activities outside of conservation as well. Some respondents also included general social networks or defined communities, such as Amish or Mennonite farmers, as networks. A few events, such as Northern Indiana Grazing Conference and the Agricultural Council Breakfast, were also listed as networks. These examples all highlight the difficulties in defining networks.

Based on our own experiences working with networks and our initial conversations with other regional collaborators, we have categorized the 200+ networks (broadly defined) into four groups:

Farmer-centered networks (133)

Public agencies supporting farmer conservation through programs or policies (31)

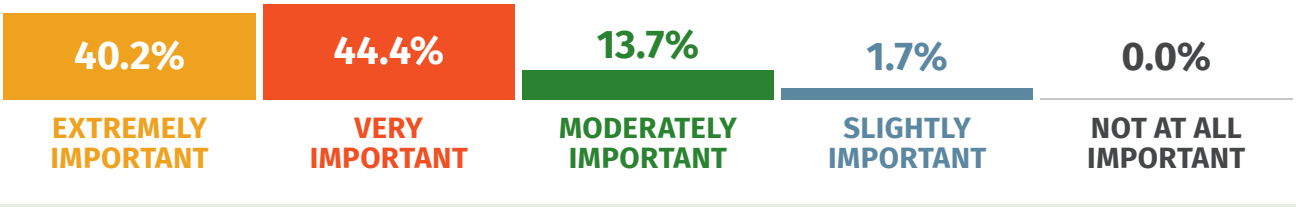
Private organizations supporting farmer conservation efforts (38)

Other (events and general social networks) (8)

We have retained all categories in our analysis to reflect the complexities of this work. The public and private organizations supporting farmer conservation efforts are also important, as they often interact with and directly support the efforts of the networks identified here. Given our focus on farmer-centered networks, we provide summary characteristics for the networks only below.

Throughout this work, organizations and individuals we spoke with emphasized the importance of farmer networks in expanding use of conservation agriculture. Respondents to our first survey overwhelmingly agreed in the importance of farmer networks (fig. 1).

FIGURE 1: HOW IMPORTANT DO YOU THINK FARMER NETWORKS ARE FOR EXPANDING ADOPTION OF CONSERVATION PRACTICES?



Farmer Network Characteristics: Geographies

Wisconsin had by far the largest number of farmer networks in the region (fig. 2), likely a result of the DATCP farmer-led watershed group program. This program likely results in more networks due to the funding and support available, as well as a program to formalize farmer groups that may be more informal in other states. We have created a preliminary map of network locations (fig. 3); this visualization shows the general distribution of networks, but is not comprehensive of all networks, or the geographic extent of networks we have identified. We have also not included state-wide organizations or networks in this map; future work is needed to refine where these larger organizations are primarily active within each state.

FIGURE 2: FARMER NETWORK LOCATIONS

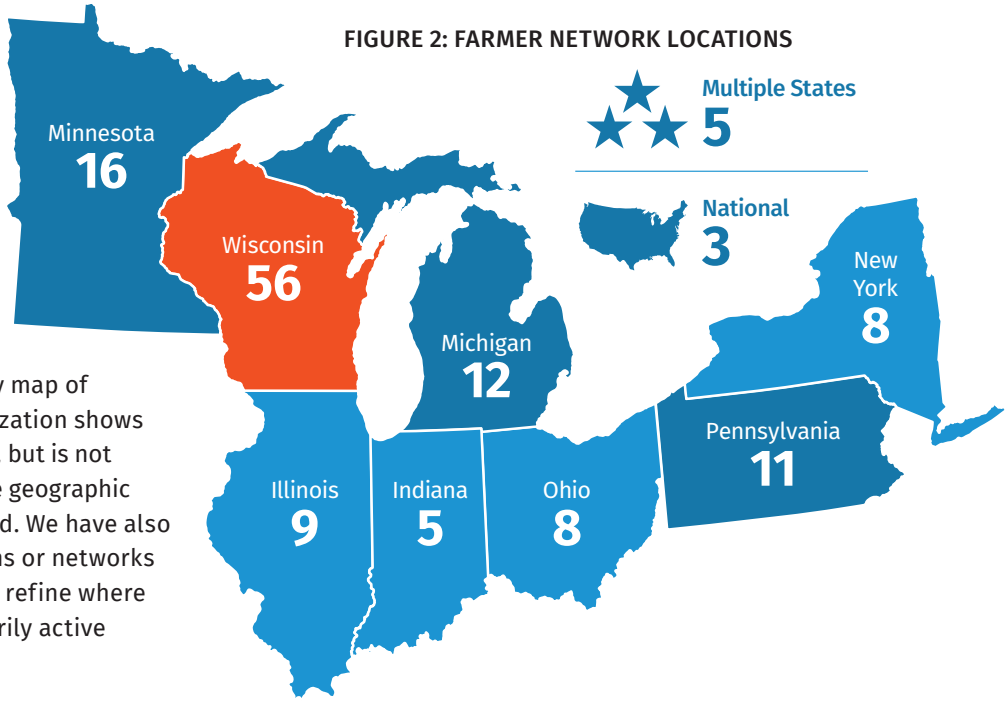
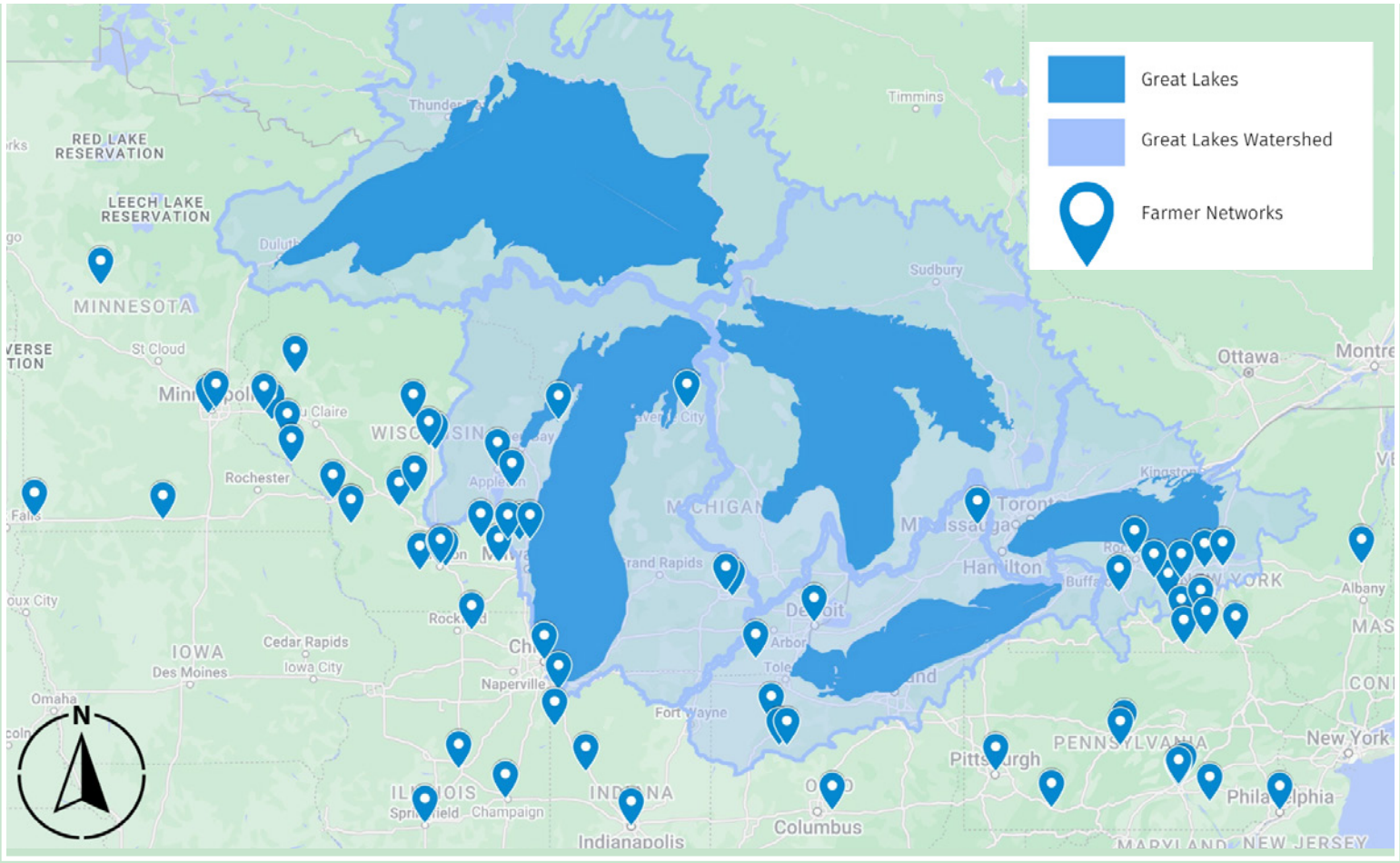


FIGURE 3: FARMER NETWORK INVENTORY – GREAT LAKES REGION



Network Characteristics: Growth, Leadership, and Funding

To better understand the membership of these networks, we asked about the network size and membership. Networks vary quite a bit in size, and not all are structured in the same way. Several respondents indicated that they are not membership-based organizations and had difficulty responding to the question. For example, the Conservation Cropping Systems Initiative (CCSI) in Indiana potentially reaches thousands of farmers either directly or indirectly through network activities, including newsletters, social media, outreach events, etc. CCSI also has a group of farmers that more actively participate in outreach programming or demonstration projects, but are not officially members. While about 25% of networks in our sample were large (over 1,000 members or active participants), over half are quite small, with less than 100 active participants. This finding also aligns with the insight from the farmer networks survey that about half of surveyed networks focus on local geographies (fig. 4), such as a county or local watershed scale. About 25% of networks are state or regional in scale, which corresponds with the larger membership networks. Networks vary in how long they had been active, with about half of networks less than 5 years old and half more than 5 years, and a significant proportion of networks more than 10 years old. Networks in eastern basin states (NY, PA, and OH) were older on average than other states (fig. 5).

Nearly all networks are either maintaining or growing, potentially reflecting increased emphasis on social approaches to conservation in recent years, as well as more resources and support for networks (including through the DATCP producer-led program). Network leadership also varies, with only about one third led by farmers (fig. 6). This finding is somewhat surprising, given the importance of farmer leadership expressed in interviews and discussions with other conservation organizations. This could reflect a gap in the time and skills required to lead a conservation organization and the capacities of many producers. While many farmers are interested in engaging in organizations that provide technical or social resources, yet may not have the ability to serve in a leadership role. This also emphasizes the important facilitating role that public agencies and private organizations play in supporting networks. Networks receive funding from a range of sources (fig. 7), most often government funds (state/local and federal), though NGO and foundation funding also serve as important sources for some networks. A smaller proportion of networks utilize direct fundraising or member fees for

FIGURE 4: WHAT GEOGRAPHIC SCALE DOES THIS NETWORK WORK AT (E.G. COUNTY, WATERSHED, REGIONAL, STATE-WIDE)?

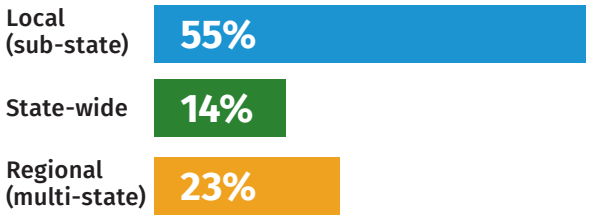


FIGURE 5: NETWORK AGES BY STATE

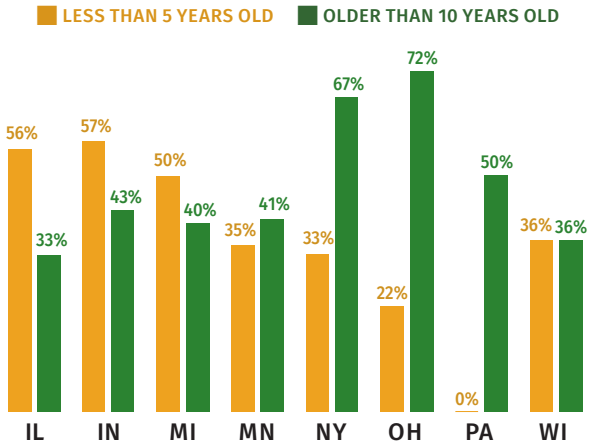


FIGURE 6: PRIMARY LEADERSHIP OF FARMER NETWORKS

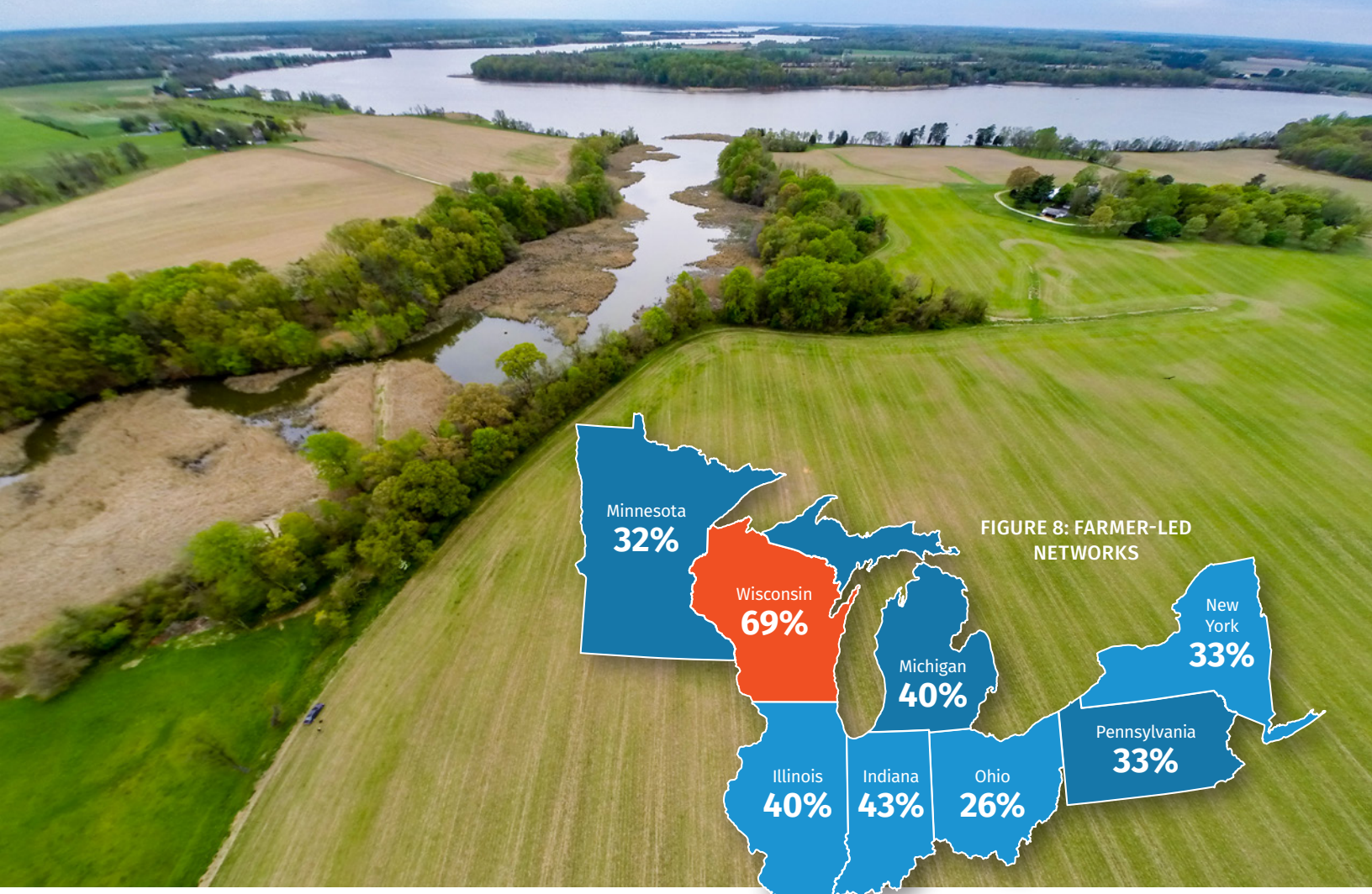
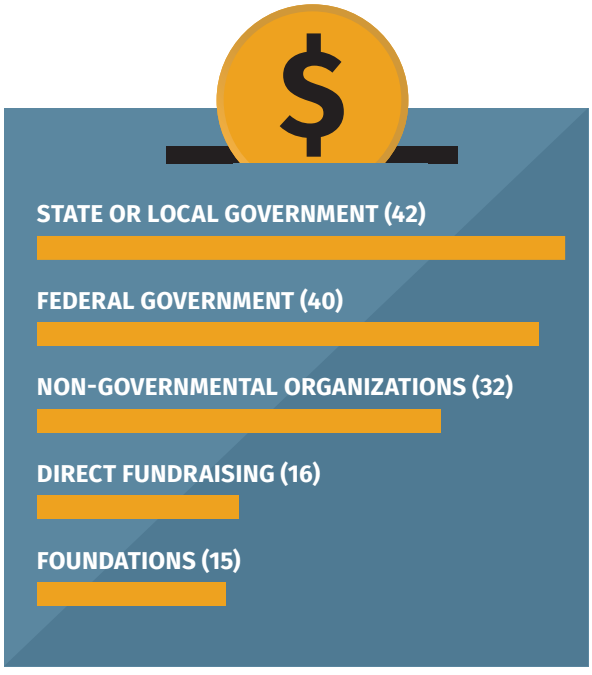


FIGURE 8: FARMER-LED NETWORKS

Photo Credit: Edwin Remsberg/SARE Media Library

FIGURE 7: SOURCES OF FINANCIAL SUPPORT RECEIVED



financial support. This highlights the importance of facilitating organizations (both public agencies and private organizations) in supporting farmer-led conservation efforts.

Our networks survey also revealed interesting state-by-state differences in network leadership. In most states, farmers served as leaders in around 1/3 of networks, with Wisconsin standing out with nearly 70% of networks led by farmers (fig. 8). This likely reflects the state-wide farmer-led watershed group program. New York and Pennsylvania stood out with a larger proportion of networks led by government agencies (NY) and NGOs (PA). To add further insight, we also looked at differences in focus by leadership, with the hypothesis that different stakeholders have different goals. There was virtually no difference between leadership type on soil health focus, with about half of networks in each category selecting this option. However, the disproportionate focus on water quality of agency-led networks may support our hypothesis. These charts may indicate why New York stands out from other states in terms of networks led by agencies and focused primarily on water quality.

What Networks Do: Conservation Focus

Soil health was the largest area of focus for networks (fig. 9), reflecting a broad subject focus as opposed to single practices (cover crops, no-till, nutrient management). Water quality and rotational grazing were also focus areas, reflecting variation in the motivating issues for networks. Networks also engage in a range of activities to support conservation efforts, including field days, trainings, and conservation planning (fig. 10). There is also a substantial "other" category, which includes activities such as watershed events, conferences, and technical support. Overall, networks tend to rely on demonstrations and more "hands on" events, which may reflect farmers' preferred learning style.

There were also significant differences in issue focus between states (fig. 11). One important note is that respondents could select multiple answers to this question, so networks can focus on more than one issue. New York and Michigan had more relative focus on water quality compared with in-field farming practices (cover crops, nutrient management, rotational grazing), while in the other states cover crops and soil health were a focus of over half the networks. Nutrient management and pest management, both broad terms encompassing a variety of strategies to minimize use of synthetic chemicals and associated negative impacts on environmental quality, are both less likely to be the focus of farmer-centered networks. This is a potential missed opportunity; more effort is needed to understand why these areas are not as large a priority for networks, given their potential benefits both for environmental quality and farm production & profitability. Indiana networks tended to focus on a wider range of issues, resulting in higher relative focus on nutrient management and rotational grazing in addition to soil health. This is perhaps a reflection of the fact that Indiana had a large state-wide network and may have a broader organizational mission than local networks such as those found in Wisconsin.

FIGURE 9: WHAT ISSUES OR PRACTICES DOES THIS NETWORK PRIMARILY FOCUS ON?

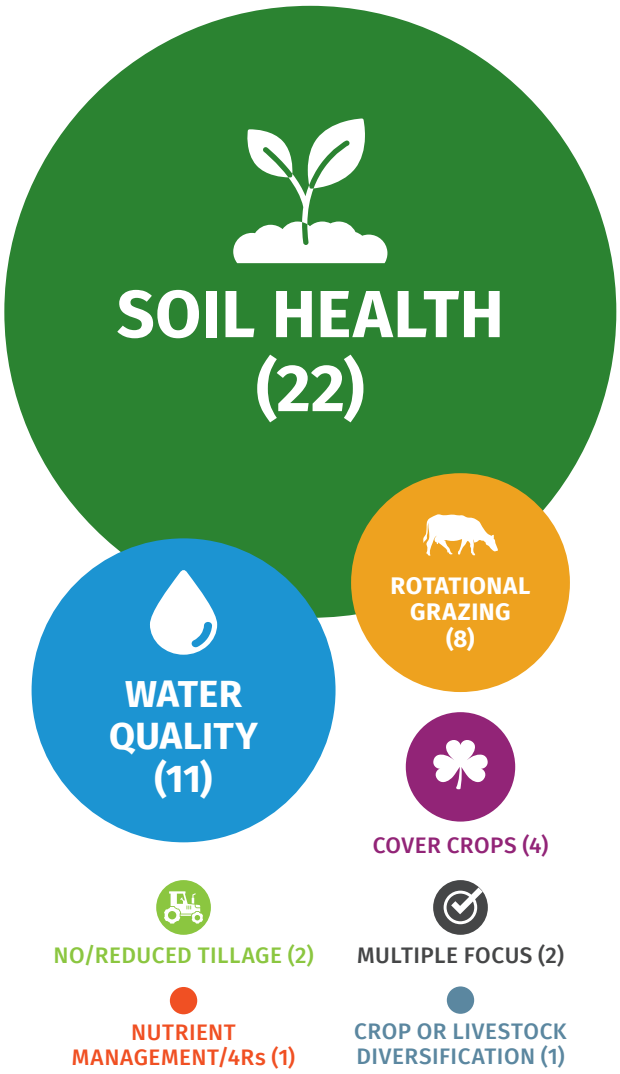


FIGURE 10: ACTIVITIES USED BY FARMER NETWORKS TO SUPPORT CONSERVATION EFFORTS

FIGURE 11: ISSUE FOCUS BY STATE

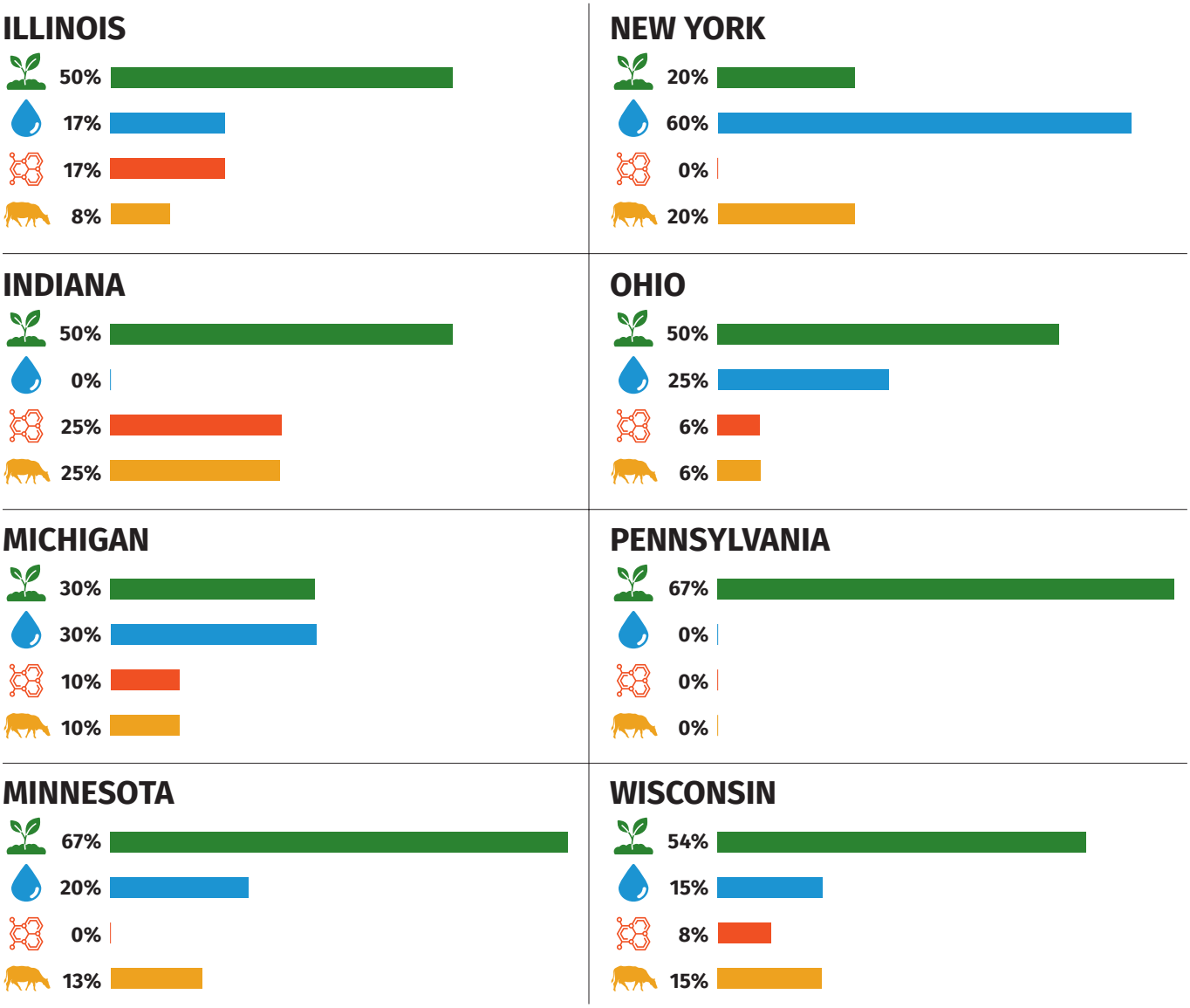


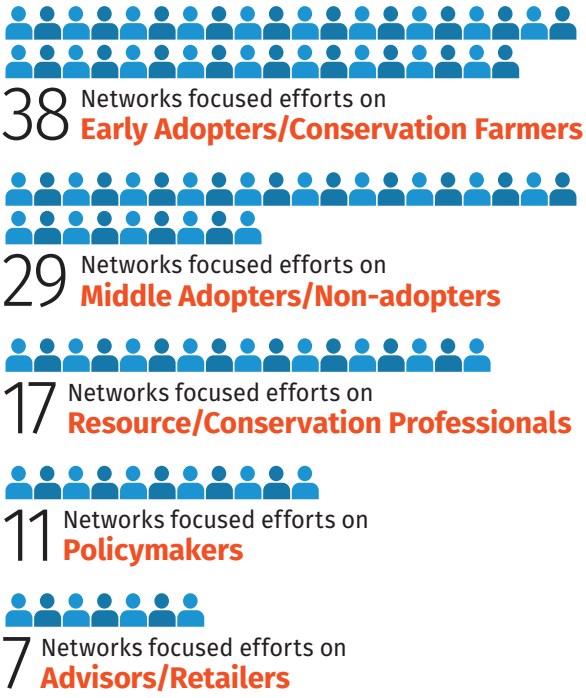
Photo Credit: NWF

What Networks Do: Outreach Efforts

Networks can focus their engagement efforts on a range of stakeholder (fig. 12), with survey results indicating (unsurprisingly) that most networks focus primarily on farmers. Within farmers, early adopter farmers are the most common focus, with fewer networks focused on non-adopters. Networks often focus on multiple types of stakeholders, with 40% of respondents in our conservation organization survey indicated at least two stakeholder types as a focus of the networks they identified.

The network representatives we surveyed had a slightly different perspective on who were their primary outreach targets. Every network in our sample includes early adopters of conservation practices, with many also targeting non-adopters, beginning farmers, and non-farming audiences. Less typical audiences included non-operating landowners (a key stakeholder in farm decision making, with nearly half of farmland owned by non-operators), historically underserved and BIPOC farmers, and policy-makers. These last categories appear to be missing opportunities in many ways. While the large majority of farmland in the Great Lakes states is owned and operated by white producers, there are growing numbers of beginning farmers, Black and Indigenous producers (especially in urban and peri-urban settings), and women producers in the region that may be missing from outreach efforts focused on conservation. In our conservation organization survey, we identified multiple organizations focused on urban agriculture, food access, or supporting women or Black and Indigenous producers. These organizations often do not have a large conservation focus; there may be more opportunities to facilitate connections between conservation-focused networks and organizations supporting historically marginalized farming populations.

FIGURE 12: WHO FARMER NETWORKS FOCUS THEIR OUTREACH AND ENGAGEMENT EFFORTS ON



The networks we surveyed indicated they use a variety of strategies for communication within the network and with external audiences, with in-person activities (field days, demonstrations, meetings) are the most favored, supplemented by social media, email and text. More traditional media, including field signs and newsletters, are also used but less often than the more personalized communication methods.

Photo Credit: NWF

Defining Network Success

In our first survey, we asked how networks define success, both in terms of the outcomes they focus on and the metrics of success they use (fig. 13). Networks tend to have a number of outcomes they focus on; 90% of respondents indicated networks have more than one priority outcome. These results indicate a mixture of environmental and economic focus of networks, reflecting the socio-ecological nature of agriculture. While improving environmental conditions (whether soil health, water quality, or climate change) is often a focus, these goals are also tied closely with farm economic sustainability. These distributions of outcomes also align with the focus areas of networks in figure 9, with soil health (practices with both production and environmental benefits) as the largest priority, followed by water quality and rotational grazing (another holistic management approach, but in livestock production systems).

FIGURE 13: METRICS USED BY FARMER NETWORKS TO MEASURE SUCCESS OF OUTCOMES

- ✓ **Local demonstrations of conservation success**
  (used by 39 farmer networks)
- ✓ **Increased knowledge of conservation systems**
  (used by 35 farmer networks)
- ✓ **Development of new practices, methods, or approaches to conservation**
  (used by 32 farmer networks)
- ✓ **Improved environmental conditions**
  (used by 31 farmer networks)
- ✓ **Increased connections between farmers and other community members**
  (used by 30 farmer networks)
- ✓ **Strengthened farmer social connections**
  (used by 30 farmer networks)
- ✓ **Practice adoption by non-adopter farmers**
  (used by 24 farmer networks)
- ✓ **Access to new technology or equipment**
  (used by 16 farmer networks)

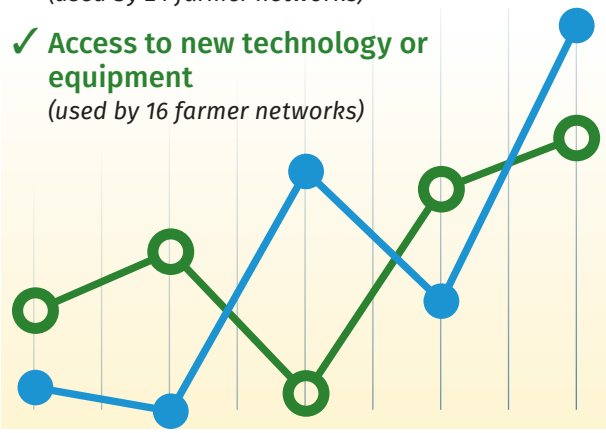


Photo credit: NWF

Given the broad range of outcomes networks are aiming to achieve, it is not surprising that networks use a variety of metrics of success. Despite many networks desiring improved environmental conditions, this was not the most commonly used metric. This may be in part due to the challenge and expense in measuring environmental conditions, which may be outside the capacity of many farmer networks, as well as the complex relationship between network activities and consequent environmental changes. Holding local demonstrations, on the other hand, may not be the best measure of the desired outcome but are easier to track and measure.

It is also striking that increasing knowledge of conservation systems is a much more common metric of success than practice adoption; changing environmental and economic conditions requires changes in farm management, but measuring causal relationships between engagement activities and behavior change is challenging. Measuring knowledge changes is more straightforward and a more direct result of outreach activities.

Another insight is the relationship between the target audience for networks and the metrics of success used. Networks most often focus on current practice adopters (early adopters) and consequently innovation in practices (development of new practices, methods, or approaches) is a more common metric than practice adoption by non-adopters, which are slightly less often the focus of networks. Lastly, while it is not the most common metric, strengthened farmer social connections and community connections are also important metrics of success for many networks. This reflects the importance of social processes as part of conservation efforts, underlining the importance of network-based conservation.

What Networks Need: Areas of Support

While networks receive funding from a range of sources (fig. 7), financial capacity is also a key constraint for networks as well (fig. 14), in both financial resources and flexibility in funding. Respondents indicated a variety of areas in which networks need more support, including outreach and communications training, access to technical resources and equipment, and to a lesser extent, leadership training. Networks also expressed needs in a variety of areas, especially in access to financial resources and funding flexibility. Training in communications and leadership are needs, as well as technical and equipment, though to a lesser extent than financial resources.

FIGURE 14: WHAT AREAS DO FARMER NETWORKS NEED THE MOST SUPPORT?

WHO NETWORKS COLLABORATE WITH

In our survey of farmer networks, we asked what organizations these networks most frequently collaborate with (fig. 15). This question was intended to expand on a key finding of our first survey: farmer-centered networks are one category within the larger conservation organization system and often work closely with other agencies and civil society organizations, including NGOs. We categorized responses to this question to get a sense of the types of collaborators or supportive organizations networks most frequently are connected to. Unsurprisingly, government agencies and NGOs are the most frequently cited organizations, followed by other farmer networks, universities, and farm industry organizations. A last note about this question is that we allowed for up to five responses for each network and nearly all respondents included five. It is likely that most networks collaborate actively with more than five other organizations, reflection the collaborative nature of these networks. More effort is needed to understand the types of collaborations and support occurring within these relationships.

FIGURE 15: WHAT OTHER GROUPS OR ORGANIZATIONS DOES THIS NETWORK COLLABORATE WITH?

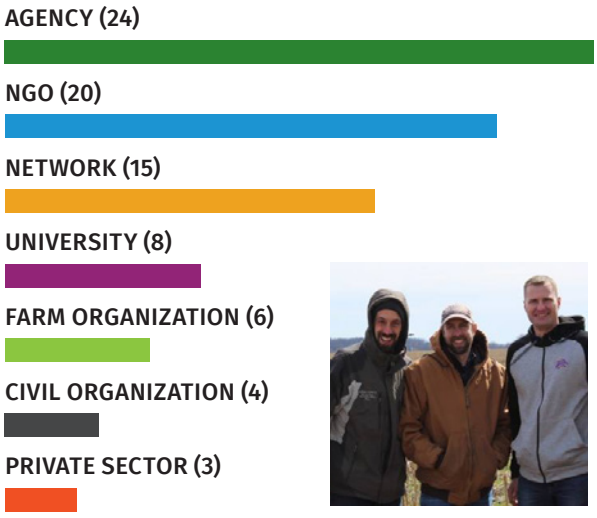


Photo credit: NWF

RECOMMENDATIONS FOR SUPPORTING FARMER-CENTERED NETWORKS

This project has filled in some significant gaps in our understanding of the distribution, structure, and focus of farmer-centered conservation networks in the Great Lakes region. We have learned much about these networks, their importance to conservation efforts as expressed by both conservation practitioners and farmers themselves, and areas in which networks need further support to achieve their goals. We close this report with ideas for future work related to farmer conservation networks, in three areas: research, policy, and practice.

Research: Through key informant interviews and two rounds of surveys, we have learned much about these networks, especially where they are active geographically, how they are structured, what approaches they take to engage farmers and promote conservation, and what aspects of conservation and stewardship they focus on. There are several key gaps that remain that merit further investigation:

- **Environmental and Behavioral Impact:** While we surveyed networks about their conservation goals and metrics of success, more insight is needed into the actual documented impacts of these networks. Have their activities increased conservation adoption by non-adopters, or social indicators of behavior change (e.g. changed attitudes, strengthened social norms, participation in programs)? Have network efforts resulted in measurable improvements in water quality and other important environmental indicators?
- **Funding Needs:** One notable finding from our survey research is the need for increased funding and funding flexibility for networks. We have collected some data to indicate the mix of federal, state, non-profit/foundational, and direct funding raising support that networks rely on, but further research is needed to better understand these funding streams and structures, and to evaluate what have been the most effective mechanisms for supporting network activities.
- **Social Norms:** We are still uncertain about the exact mechanisms by which farmer networks effectively engage farmers and how their efforts result in behavior changes. Throughout this project, we have consulted with the research literature on the role of networks and peer-to-peer organizations. The evidence from much of this literature is that social and personal norms (expectations of behavior) are an important change mechanism, perhaps as important or more important than knowledge sharing or learning. Norms are a challenging area to research, yet more research on how norms change over time (including how long it takes to build conservation-supportive norms) and and what are the most effective mechanisms for changing norms.

Policy: Wisconsin's producer-led watershed group program is unique within the Great Lakes states, and has resulted in a noticeable difference in the number and geographic distribution of networks within the state. Similar to the research case study focused on the history and impacts of the program, this program would make for an effective policy analysis case study, which could inform policy recommendations for other states within the region. By analyzing the state-level history of the policy, including how the program was initially started, how funding has changed over time, and the aspects of the program that have proven most effective, this program could serve as a powerful model for other states to implement similar programs with lessons learned from Wisconsin.

Practice: Throughout this project, conservation organizations, network leaders, and farmers have continually expressed the importance of farmer-centered networks, a desire to share their accomplishments more broadly, and interest in learning about the outcomes of this project. While it is clear from our efforts that networks actively collaborate with a wide range of other conservation agencies, organizations, and networks across the region, in most states there is a lack of a coordinating organization to facilitate connections across networks. Regional organizations and collaboratives could serve to collect and share resources and lessons learned from networks across the Great Lakes states and beyond. Our work reveals that networks need the most support include: leadership and facilitation skills; membership recruitment and management; outreach to diverse audiences, especially Black and Indigenous farmers, beginning farmers, and women producers and landowners; ideas and best practices for outreach events, field days, and demonstrations; and monitoring and evaluation approaches.

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