

## SC 4 - Diversifying Agricultural Land with Perennial Crops

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**Project Lead:**

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**Description:** Increasing amounts of rainfall are negatively impacting water resources in Minnesota, and the Scott Watershed Management Organization (Scott WMO) is adopting a goal to build resiliency as part of its next plan. One of the potential resiliency-building strategies is to increase the amount of land in perennial crop cover. Land in the watershed is roughly 50% agricultural, with most of it planted in annual row crops.

Annual farming leaves fields fallow in between growing seasons and offers less root mass throughout the growth cycle. This leaves fields vulnerable to wind and water erosion, which destroy topsoil and threaten microbial and plant populations. Agriculture can be made more sustainable by transitioning annual agricultural systems to perennials. Perennial plants develop much greater root mass and protect the soil year-round. Additional benefits of conversion to perennials include reduced chemical runoff, reduced fossil fuel usage, and diversification of the local farm economy.

In 2016, the Minnesota Legislature directed the Board of Water and Soil Resources (BWSR) to prepare a plan and feasibility study for a Working Lands Watershed Restoration Program. Although this information will be valuable, it is focused on crops used for biofuels. Scott WMO believes that perennial food crops can also provide benefit and are appropriate in areas adjacent to the Twin Cities metropolitan area. The WMO already supports a successful farmland conservation practices program that encourages perennial cover such as native prairie plantings and use of cover crops, but most participants are motivated by the habitat benefits these practices provide. The organization would like to explore the potential for perennial food crops that can both provide the benefits of living cover and produce an economic return that would potentially incentivize greater participation by farmers.

**Key Issues, Questions, and Ideas for Exploration:**

- How have other county or regional governments encouraged or incentivized the diversification of agricultural land with perennial crops? To start, Sioux Falls (SD) and Woodbury County (IA) provide good examples. What challenges and barriers did they face? What role does the county or municipal government play in such things as incentivizing the conversion to perennial crops, supporting the purchase of specialized harvesting equipment, bringing crops to market, or insuring against crop failure?

*(continued)*

- What insights do participants in the Working Lands program have about their participation that might help to inform a perennial food crop program in Scott County?
- What specific opportunities and challenges/constraints do Scott County agricultural producers and Minnesota producer groups perceive related to replacing annual crops with perennial food crops? What would they need to be persuaded to participate in such a program?
- What is the future market demand for various perennial crops grown in Minnesota? What agricultural infrastructure (e.g., for harvesting, processing, marketing, delivery) is needed to bring these crops to market in a cost-effective manner for farmers?
- What new perennial food crops are on the horizon that might be suitable for converting annual row crop land in Minnesota to perennial crops?

### **How Will Student Work Be Used to Build Community Resiliency?**

The Scott WMO and its partners will use student deliverables to revise its Conservation Financial Assistance Program to promote perennial crops. This may include adding additional cost share or incentives, changing outreach messaging, providing “insurance” to help cover the farmer’s risk, or assistance with market development. Student work will help to identifying both policy and practical challenges and opportunities.

### **Existing Plans and Reports:**

- *Working Land Watershed Restoration Program, Interim Report to the Minnesota Legislature.* BWSR October 15, 2017.
- *Social Science-Based Evaluation of Scott County’s Technical Assistance and Cost Share Program.* Pradhananga and Davenport. University of Minnesota, Center for Changing Landscapes. June 29, 2017.
- *2018 Conservation Practice Financial Assistance Program Policy Manual,* Scott SWCD
- U of MN [Forever Green project](#) (Dr. Don Wyse, CFANS)

### **Potential Stakeholders and Partners:**

- Scott Soil and Water Conservation District (SWCD) (provided letter of support)
- Prior Lake–Spring Lake Watershed District (provided letter of support)
- Minnesota Board of Water and Soil Resources (BWSR) (provided letter of support)
- Scott County farmers
- Producer groups (e.g., Minnesota Apple and Grape Producers)
- Shakopee Mdewakanton Sioux Community

*To learn more about this project or discuss how to integrate it into a UMN course or an individual student project (such as a culminating experience, capstone, master’s project, or independent study), please contact Sarah Tschida or Mike Greco with the Resilient Communities Project at [rccp@umn.edu](mailto:rccp@umn.edu).*