



Case Study

Soil and Water Outcomes Fund

PROBLEM

Maintaining water quality can be challenging in landscapes that are dominated by agriculture. Runoff from farm fields contains sediment as well as excess phosphorous and nitrate that can degrade source water and increase water treatment costs for municipalities. As a result, municipalities may incur additional costs of upgrading their wastewater treatment plants to account for the effects of agricultural runoff. Farmers lack incentives to make investments for water quality. Further, state and federal water quality programs typically take a scattershot approach to paying for projects without ensuring the investments lead to the proven intended outcomes. Solutions exist to reduce this type of runoff, such as the use of cover crops; however, implementing these changes are oftentimes too costly for farmers to seek out on their own.

SOLUTION

The Soil and Water Outcomes Fund (SWOF) provides direct payment to farmers who implement conservation practices that lead to improved water quality and carbon sequestration. Examples of conservation agriculture techniques include reducing tillage and planting cover crops, which reduces overall soil erosion and runoff. Using analytics and on-the-ground agronomists, SWOF can model proposed outcomes to these practices and generate water and carbon outcomes.

OUTCOMES AND COBENEFITS

- Improved water quality and decreases risk of flooding
- Increased carbon sequestration in soils
- Improved economic and ecological resilience of farmers
- Decreased water and wastewater treatment costs for municipalities
- Enhanced biodiversity and habitat protection
- Savings of 30-50% for federal and state water quality funding with verified outcomes
- Additional revenue streams for farmers
- Verified outcomes for corporates seeking to meet sustainability targets (no “greenwashing”)

FINANCIAL MECHANISM

SWOF uses sub-market capital to provide financial incentives to farmers for the implementation of conservation agriculture practices on private land that lead to positive environmental outcomes. SWOF then sells the water outcomes to all three levels of government (USDA, state departments of agriculture, and municipalities seeking to meet their effluent limits). Additionally, the carbon outcomes are sold to corporations to meet their sustainability targets. Because there are different environmental credits that result from the implementation of these sustainable agricultural practices (e.g., water and carbon), this allows credit buyers to only pay for the outcomes they desire rather than the cost of full program implementation. Furthermore, “stacking” of both payments (water and carbon), allows SWOF to be able to repay its debt service and profitably continue to operate.

SWOF is managed by AgOutcomes, a subsidiary of the Iowa Soybean Association (ISA) and was implemented in partnership with ReHarvest Partners, a subsidiary of Quantified Ventures. Also involved in the project is Sustainable Environmental Consultants (SEC), a third-party outcomes quantification organization for water quality, carbon sequestration, and water quality.

FINANCING SOURCE

The Soil and Water Outcomes Fund used sub-market capital (Iowa State Revolving Fund) to provide financial incentives to farmers for the implementation of conservation agriculture practices.

REPAYMENT SOURCE

The Soil and Water Outcomes Fund sells the water and carbon outcomes generated by conservation agriculture practices to public and private partners, who use the outcomes to meet their own regulatory or voluntary targets.

FINANCING SOURCE	REPAYMENT SOURCE
Iowa State Revolving Fund provides financial incentives to farmers for conservation agriculture practices	The selling of water and carbon outcomes generated by conservation agriculture practices to public and private partners

ROLE OF A GREEN BANK OR COMMUNITY LENDER

Subsidiaries of Quantified Ventures and the Iowa Soybean Association partnered to launch the SWOF. The primary goal of the project was the scale up public programs that incentivize farmers to implement conservation practices. In future projects, a green bank could facilitate connections between private capital and trusted farming organizations to set up similar programs. Low cost financing was critical in the launch and scaling of SWOF. Initial investment by the Iowa Finance Authority for a submarket rate loan allowed early, riskier transactions to “pencil”. Access to national and local green banks could be instrumental in repeating this case study.

“READINESS” LEVEL

The SWOF is currently active in the Chesapeake Bay watershed area, as well as in states such as: Illinois, Indiana, Iowa, Missouri, Minnesota, North Dakota, South Dakota, Ohio, Pennsylvania, and North Carolina.

MORE INFORMATION

To find other case studies and more information about financing nature-based solutions go to our website here: <https://nicholasinstitute.duke.edu/project/green-banks-and-community-lenders-financing-nature-based-solutions>

REFERENCES

Soil and Water Outcomes Fund. <https://theoutcomesfund.com/>.
 AgOutcomes. <https://www.agoutcomes.com/>.
 Quantified Ventures. <https://www.quantifiedventures.com/soil-and-water-outcomes-fund>.
 Ranganathan, J., Waite, R., and Searchinger, T. (2020). Regenerative Agriculture: Good for Soil Health, but Limited Potential to Mitigate Climate Change. <https://www.wri.org/insights/regenerative-agriculture-good-soil-health-limited-potential-mitigate-climate-change>. World Resources Institute.
 Antolini, F., Tate, E., Dalzell, B., Young, N., Johnson, K., & Hawthorne, P. L. (2020). Flood risk reduction from agricultural best management practices. *JAWRA Journal of the American Water Resources Association*, 56(1), 161-179.
 Hoorman, J. J. (2009). Using cover crops to improve soil and water quality. Lima, Ohio: Agriculture and Natural Resources, The Ohio State University Extension. <https://ohioline.osu.edu/factsheet/anr-57>

CASE STUDY CITATION

Torre, J., Mason S., and Warnell, K. 2023. “Case Study: Soil and Water Outcomes Fund.” *Nature-Based Solutions Financing Working Group Project*. Durham, NC: Nicholas Institute for Energy, Environment & Sustainability, Duke University. <https://nicholasinstitute.duke.edu/project/green-banks-and-community-lenders-financing-nature-based-solutions>.

Nature-Based Solutions Financing Working Group