



2019 Impact Report

July 2018–June 2019



Mission

We're a community of farmers and supporters, focused on education and evidence-based research, for the purpose of building a more economically-just, environmentally-regenerative, and community-focused food system.

PASA
P.O. Box 419
Millheim, PA 16854

Contact us:
info@pasafarming.org
814.349.9856

Follow us:
  @pasafarming

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Director's note

Thanks to you, we have important accomplishments to celebrate. We're excited to share with you what it is you've made possible.

By being a supporter of our work, you've taken a stand for farmers who are stewarding the health and hope of our families and our communities. Not because they have to, but because they know we have a shared responsibility to protect the natural resources on which we all depend.

The farming of the future must rely on the age-old principles of ecology, and put public and environmental health—which are inextricably linked—at the forefront.

Enjoy this look back at some of our most recent accomplishments. We can do so much more because of you.

Sincerely,



Hannah Smith-Brubaker, Executive Director



How you can help

Individual donations currently account for 32 percent—nearly a third—of our operating budget. Donors and members like you truly make our work possible. Here's how you can help us protect public and environmental health by advancing the art and science of sustainable agriculture:

- **Become a member.** As a member, you receive discounts to our year-round events, full voting rights, and support our education and research programs.
- **Become a monthly donor.** Monthly donations of \$10 or more provide an important and reliable source of funding for our education and research programs.
- **Donate to the Arias M. Brownback Memorial Scholarship Fund.** Arias Brownback attended his first PASA Sustainable Agriculture Conference at the age of 18, leaving inspired to carry on the tradition of his parents and start his own organic farm. This memorial fund provides financial

support to young and beginning farmers who wish to attend our annual conference, helping them fulfill their aspirations and potential, in Arias' name.

- **Donate to the Jerry Brunetti Soil Health Research & Education Fund.** Jerry Brunetti was a soil health enthusiast whose passion for the connection between human and environmental health was unparalleled. This memorial fund furthers our soil health research and education programs in Jerry's name.
 - **Donate to the Shon Seeley Legacy Fund.** Shon Seeley was a young farmer with a fervent love for dairy and beef grazing, sustainable livestock production, and pasture management. This memorial fund supports our pastured livestock and dairy programming, in Shon's name.
- Become a member or donate at pasafarming.org or call 814.349.9856.**



Growing healthy soil to mitigate & adapt to climate change

Healthy soil is important for growing vigorous crops and pastures; reducing the use of pesticides and synthetic fertilizers; and protecting nutrient-rich topsoil from erosion and polluting waterways. Additionally, soil is a critical component of adapting to and mitigating the effects of climate change. Yet, globally, healthy soil is being lost 10 to 100 times faster than it is forming.

Through our multi-year Soil Health Benchmark Study, we're working with farmers to comprehensively assess and improve the health

of their soils. Initiated in 2016 in collaboration with Penn State University, Cornell University's Soil Health Lab, Rodale Institute, and OpenTeam, this project enables farmers to more clearly identify both what they're doing well and how they can improve. It also provides farmers with an outlet for sharing best practices and troubleshooting common soil health challenges with their peers.

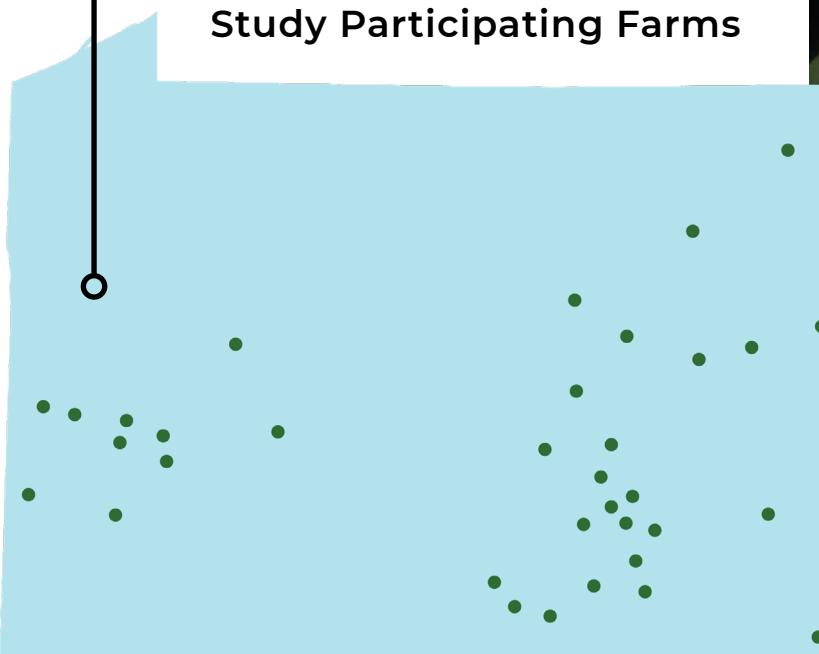
GROWING HEALTHY SOIL

Expanding our soil health research

Over the course of the past year, we've significantly expanded our Soil Health Benchmark Study with funding from the Natural Resources Conservation Service and the Pennsylvania Department of Agriculture. As of the end of our 2019 fiscal year, 60 farms across Pennsylvania and surrounding states were participating in the study, which is set to expand to 100 farms by the end of 2019.

We've also integrated a more diverse array of farms—our study cohorts now include grazing dairies, organic vegetable farms, conventional no-till grain and row crop farms, and pastured livestock farms operating at various scales and employing a wide range of production systems. This makes our Soil Health Benchmark Study the most diverse soil health community science project in the nation, enabling us to synthesize and share insights among a wide range of production systems used on real-world working farms.

Soil Health Benchmark Study Participating Farms



Collaborating to address common soil health challenges

Soil stewardship has long been a priority for Ben Hushon—a participant in our Soil Health Benchmark Study—and his family at Woodside Vu Farm, a 100-acre, no-till corn and soybean farm in York County, Pennsylvania. Yet, despite optimal soil health ratings in most areas, we found that the wet 2018 season significantly impacted Woodside Vu's physical soil structure—a trend among farmers participating in our study. At an event we hosted with other local row crop farmers in March 2019, Ben collaborated with his peers to develop soil management strategies to both rebuild Woodside Vu's soil structure and improve its resiliency to future wet seasons.



Exploring how climate change is affecting soil

The 2018 season brought record-breaking rain, causing devastating losses for farm businesses and prompting Pennsylvania to make disaster relief funding available to farmers in 61 of the state's 67 counties.

Nearly across the board, farmers participating in our Soil Health Benchmark Study saw the physical structure of their soils degrade significantly as a result of the season's wet weather. Weaker structure makes soil more prone to erosion and compaction, which can result in both lower yields and more agricultural runoff into waterways.

For the mid-Atlantic region, climate change models predict heavier and more frequent rainfall over time, so understanding how increasingly wet weather will affect soil health is important for preparing farmers to adapt to a changing climate and protect natural resources as best as possible.

Helping farmers demonstrate environmental impact in real terms

Sustainable farmers work hard to build their soil health, but often don't have a simple way to communicate the impact their sustainable practices are having both on their farm and in their community.

We've developed custom infographics for participants in our Soil Health Benchmark Study to share with potential and existing customers, highlighting results from soil health tests and other soil conservation practices in real numbers. This past year, we've updated the infographics to help farmers not only more clearly demonstrate the connection between soil and public and environmental health, but also help them more effectively market their soil-building efforts to garner greater consumer support.



Devastating for a vegetable farm, Village Acres saw 15 inches of rain in three days during the middle of the 2018 season.

Soil Health Benchmark Study participant Gay Rodgers of Hameau Farm displays her latest soil health data for her customers to review.

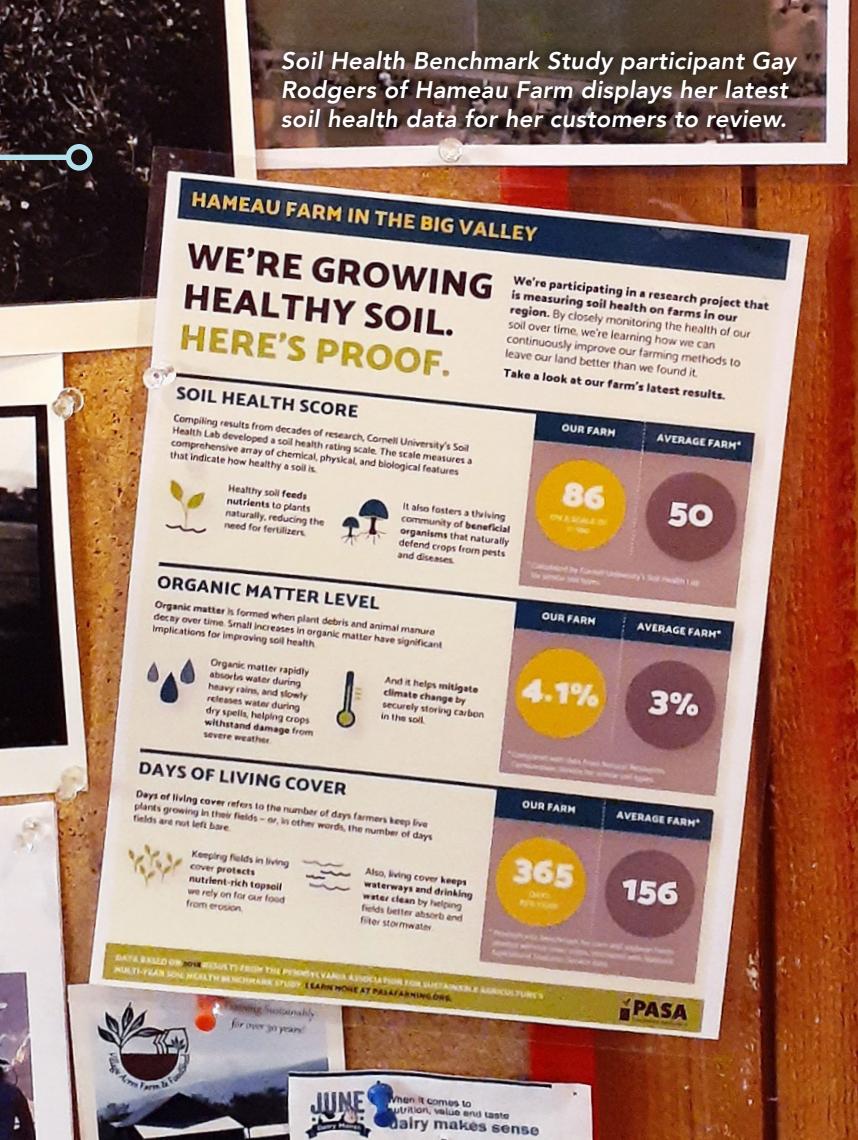
GROWING HEALTHY SOIL

Animal agriculture & sustainable food systems

Animal agricultural is estimated to account for 8–11 percent of global greenhouse gas emissions. It's clear the status quo is unsustainable, so it's important to determine what animal agriculture looks like in a sustainable food system.

Through our research, we're learning more about the soil health and overall environmental impact of pastured livestock operations so that we can better understand how animal agriculture can transform from an environmentally destructive and, in some cases, a socially problematic industry, to one that can promote animal welfare, human health, and conservation.

This work is supported by the USDA Agricultural Research Service and the USDA Natural Resources Conservation Service.



Matt Bomgardner is a third-generation dairy farmer at Blue Mountain View Farm in Lebanon County, Pennsylvania and a participant in our Soil Health Benchmark Study. Matt's 2018 soil health test results indicated that, over the last six years, he's doubled the amount of organic matter in his soil, which mitigates nutrient pollution in waterways, helps control flooding and storm surges, and more effectively sequesters carbon.



Soil Health Benchmark Study participant Matt Bomgardner, Blue Mountain View Farm
Photo credit: Codi Yeager, Chesapeake Bay Foundation

Drawing from the experience & expertise of agricultural communities

Just as we value community-based food systems, we

value a community-based approach to education and research. We recognize that our greatest asset is our diverse community of farmers, food system professionals, and sustainable agriculture supporters, which is why all of our programs are designed to facilitate an open exchange of knowledge, skills, and experiences among peers.

We collaborate with farmers and organizations across Pennsylvania and the surrounding region to conduct our participatory research projects, measuring facets of sustainability such as soil health and farm business financial viability, and to foster an expansive farmer-to-farmer learning network. Together, we're creating resilient local food systems that put human and environmental health at the forefront.



As part of our farmer-to-farmer event series, Lindsey Shapiro and Landon Jefferies of Root Mass Farm discussed how they collaborate both with one another and their community for farming success. Photo credit: Albert Yee



Diversified Vegetable Apprentice David Darling works to install equipment to monitor field water movement at The Good Farm, a research collaborator with our Water Resiliency Study.

Protecting water from agricultural contaminants

With support from the William Penn Foundation, we've expanded the scope of our research to work with farmers to improve water quality in the Delaware River Watershed in partnership with the Stroud Water Resource Center, a world-renowned research facility dedicated to studying fresh water.

This research serves to provide farmers with the tools they need to monitor how well their fields are absorbing and retaining water, and the resources they need to implement strategies for reducing agricultural runoff. As wet weather increases in the mid-Atlantic as a result of climate change, monitoring agricultural runoff water is an increasingly important component of developing sustainable farming systems that protect our waterways from environmental toxins and pollutants.

Understanding the direct-to-consumer marketplace

A cornerstone of community-based food systems are direct-to-consumer sales outlets, such as farmers markets, weekly farm share subscriptions (commonly known as Community Supported Agriculture, or CSAs), and farm stands. Direct-to-consumer markets—a \$439 million industry in Pennsylvania—are shortening the distance the food we eat travels, contributing to local economies, and increasing access to high-quality, nutritious food.

Through our Diversified Vegetable Financial Benchmark Study, which we began in 2017 with support from the U.S. Department of Agriculture and Heinz Endowments, we're collaborating with farmers to develop what, to this day, remains the only robust dataset for understanding the financial viability of farm businesses selling through direct-to-consumer markets. With this data at hand, farmers will be able to develop more realistic goals for income and revenue growth, learn best business practices from their high-performing peers, and show lenders, land holders, and investors the business opportunity vegetable farms provide.

Over the past year, we've expanded our study to include 41 vegetable farms in Pennsylvania who sell their produce through direct-to-consumer markets.

These farms have contributed comprehensive financial records for their farm businesses to our study. Study participants range from beginning farmers in their first year of business to established farmers with decades of experience under their belts.

Direct-to-consumer markets also tend to be some of the most profitable for farmers, yet little information is available about the typical returns farmers might receive within these markets. This study helps them make data-driven decisions about how to structure and hone their business models.

"[Our financial benchmark report] helps to show what we are doing well and where we need to improve, which is sometimes hard to see otherwise."

—Diversified Vegetable Financial Benchmark Study participant Aimee Good, The Good Farm

Growing demand for sustainable agriculture education

After nearly three decades of hosting our hallmark event, our annual Sustainable Agriculture Conference, the relevance of sustainable agriculture education is only growing. Young and beginning farmers are determined to nourish the health of their communities and the environment, overwhelmingly favoring sustainable farming methods over conventional methods that have dominated the industry for more than half a century. Meanwhile, experienced farmers want to fine-tune their production methods and business models to improve their results and remain financially viable over the long term.

Our annual conference creates both a vital and treasured space for farmers, food system professionals, and sustainable agriculture supporters to share their knowledge, skills, and experiences with one another.

"I am a worker on a dairy farm and a leader with the Movement of Immigrant Leaders in Pennsylvania. I manage many of the daily operations of the dairy. [At PASA's Conference] we hope to connect with more people in the agriculture sector of Pennsylvania to be able to share the experiences, needs, and contributions of immigrants in agriculture."

—Conference scholarship recipient

Conference scholarships

Thanks to generous support from individual donors, the Arias M. Brownback Memorial Fund, Heinz Endowments, and the Blue Yak Foundation, we were able to offer scholarship assistance for our 29th Annual Sustainable Agriculture Conference to all current and aspiring farmers who requested it. In total, we awarded 200 scholarships, helping to make quality sustainable agriculture education accessible to all.

Learning circle at our 2019 Sustainable Agriculture Conference

Farmer-to-farmer workshops cater to ongoing educational needs

We partnered with farms and other organizations to facilitate **53 events** on working and educational farms across the state, attended by **more than 1,300** farmers, food system professionals, and sustainable agriculture supporters.

The topics of these workshops responded to farmers' ongoing educational needs, such as:

- **Improving sustainable production methods.** We hosted **18 events** that enabled farmers to hone their land and natural resource conservation skills.
- **Growing and diversifying businesses.** We hosted **12 events** to help farmers develop business models that are financially viable for the long term.

- **Cultivating the next generation of farmers.** We hosted **15 events** to help prepare aspiring and beginning farmers for a successful career in agriculture.
- **Collaborating to troubleshoot common challenges.** We hosted **eight events** that created space for advanced farmers to work together to address shared challenges.

"There were issues that I never even thought of that I should be thinking about. They were brought up by both the presenter and others asking questions."

— Farmer-to-farmer workshop participant





During a time when the average age of a farm principal operator is 58, and 75 percent of beginning and aspiring farmers under the age of 40 did not grow up on a farm, it's critical we train the next generation of agricultural producers for the security of our food system.

According to reports recently published by the National Young Farmers Coalition, young farmers are specifically seeking access to job training opportunities on farms that adhere to sustainable practices. Responding to this expressed

Cultivating a workforce of sustainable farmers

need, we facilitate federal- and state-registered dairy grazing and vegetable farming apprenticeships throughout Pennsylvania and the surrounding region.

Our apprenticeship programs not only benefit beginning farmers—they also help established farmers fulfill their labor needs with committed and increasingly skilled employees who want to farm as a profession.



First registered apprenticeship for diversified vegetable farmers in the U.S.

We worked with owners, managers, and employees from 19 Pennsylvania farms to build the curriculum for Diversified Vegetable Apprenticeship from the ground up, thanks to support from the Hillman Foundation and the Pennsylvania Department of Agriculture. In March 2019 the Pennsylvania Department of Labor and Industry officially registered the program, making it the first formal apprenticeship in the country for diversified vegetable farm managers.

During its first year, six aspiring farmers started their 18-month apprenticeships on established farms, while more than 20 other accepted applicants and host farms are actively seeking a suitable match.

First certified “journey dairy grazier” in Pennsylvania

After completing more than 3,700 hours of on-the-job training and more than 280 hours of related coursework, Joseph Moyer became the first graduate of Dairy Grazing Apprenticeship in Pennsylvania.

Joseph apprenticed under the guidance of his father, Brian, who has worked to improve the health of his dairy farm's cows and pastures for nearly twenty years by both implementing tried-and-true grazing practices that build soil health, and experimenting with new approaches to grazing systems.

Dairy Grazing Apprenticeship is a federally registered program, operating nationally. PASA administers the program in Pennsylvania and nearby areas thanks to support from the U.S. Department of Agriculture.



Why apprenticeship?

Apprenticeship is a tried-and-true model of learning that has trained workers for careers in skilled trades for centuries. Unlike informal apprenticeships, the curriculums for formal apprenticeships—like the vegetable farming and dairy grazing apprenticeships we administer—are reviewed, approved, and registered by either the state or federal government.

Through these programs, apprentices receive **2,700+ hours** of paid, on-the-job training and **200+ hours** of related coursework over **two years**, comprehensively preparing them to manage or start their own sustainable farm.



Jessica Matthews, Dairy Grazing Apprentice, Hameau Farm. Photo credit: Emily Decker

Venturing into the raw milk business

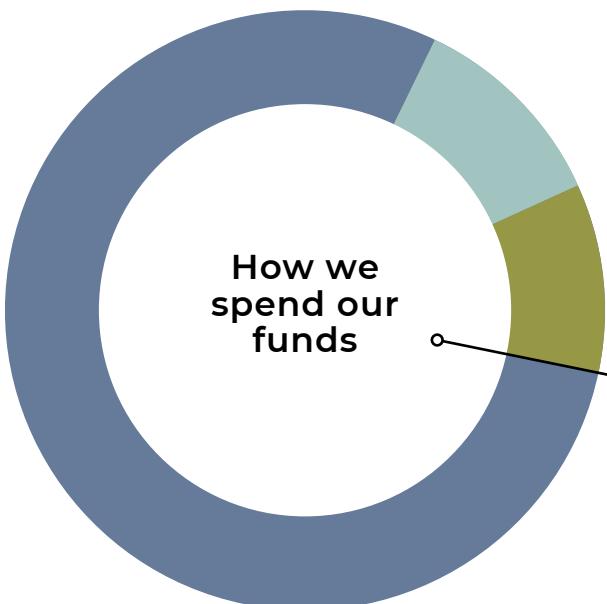
Toward the end of her first year participating in Dairy Grazing Apprenticeship, Jessica Matthews felt she had hit her stride. Milking cows became a zen routine. Her hands worked proficiently while her mind felt at ease. That's when she began to pay more attention to the bigger picture—specifically, the kind of community-based food system she wants to be a part of.

The milk that the grass-fed herd was producing at her host farm was being sold at a very low cost through a dairy cooperative, combined with milk from other dairies, then anonymously distributed by a large processing and marketing company.

Jessica thought about how she could better honor the milk the herd she loved was producing by both directly connecting it to consumers and having it generate a fair financial return.

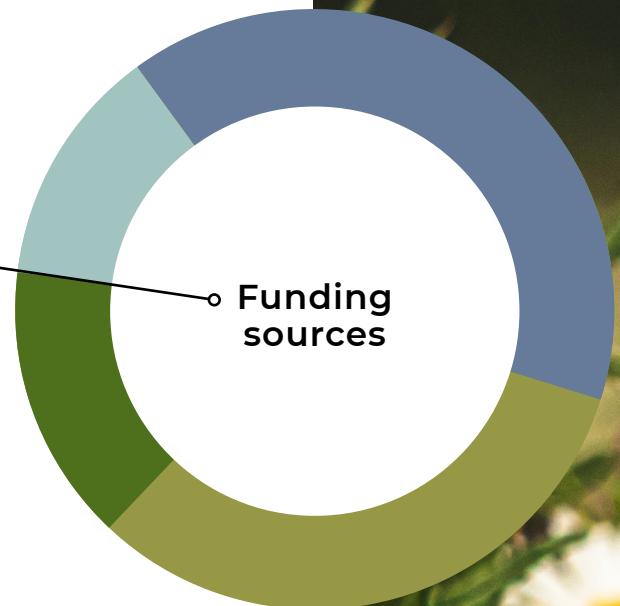
With support from the farm's owner and her mentor, Gay Rodgers, Jessica set out to start a direct-to-consumer raw milk enterprise. She successfully obtained a raw milk license for the farm, and in March 2019 Jessica and Gay were awarded a grant through the newly established Pennsylvania Dairy Investment program to build a testing lab and creamery. Today, Jessica and Gay sell raw milk directly from the farm, where customers who visit the dairy can look out to the hilly pastures and see the cows who produced it with their own eyes.

Fiscal year financials



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PASA
Sustainable Agriculture



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