# AGRICULTURAL SUSTAINABILITY IN THE ADIRONDACKS

## *Micro-Grant Program Impact Assessment (2016-2023)*

ADIRONDACK COUNCIL
PRESERVING WATER, AIR AND WILDLANDS

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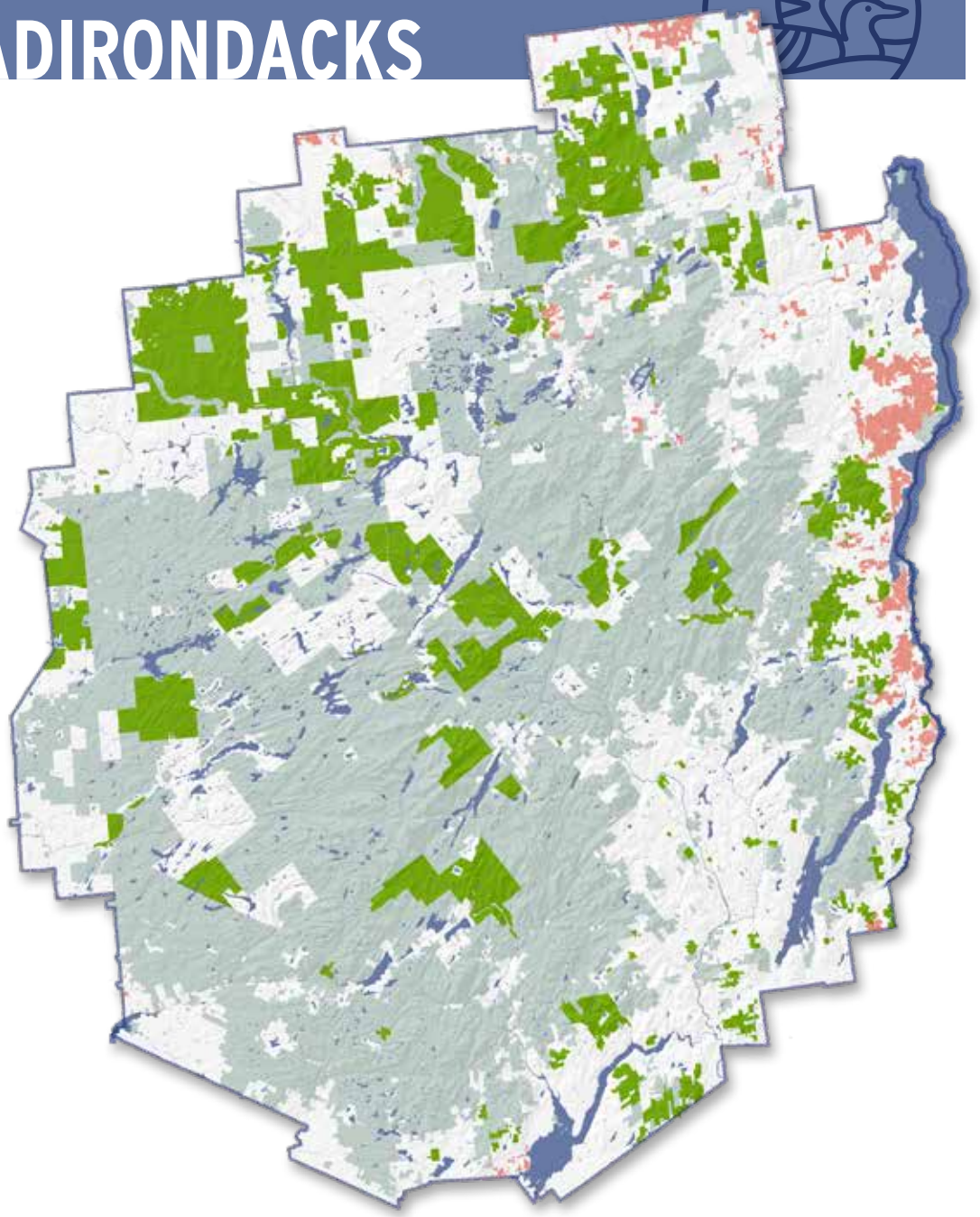
*All photos provided by the Adirondack Council and photographer Ben Stechschulte, unless noted otherwise.*

# AGRICULTURE IN THE ADIRONDACKS

The Adirondack Park is one of the largest intact temperate forest ecosystems left in the world. It is also the largest park in the contiguous United States. It contains six million acres (9,300 square miles) of interspersed public and private lands, covers one-fifth of New York State and is equal in size to neighboring Vermont.

Nearly half of the Park is publicly-owned Forest Preserve, protected as "Forever Wild" by the NYS Constitution since 1894. The remaining half is private land, devoted principally to hamlets, forestry, agriculture, and open-space recreation. Approximately 56,000 acres are agricultural lands where crops, livestock and natural fiber products are produced. In the Adirondacks, farms are mainly found on the northern and eastern sides of the Park throughout the St. Lawrence and Champlain Valleys.



**Map Key**

- Agricultural Lands
- Forest Preserve - Public Lands
- Private Lands
- Conservation Easement Lands
- Waters

# EXECUTIVE SUMMARY

Adirondack Council, the largest environmental non-profit organization focused solely on the Adirondacks, was established 50 years ago to protect the wild character of the Adirondack Park. The Council's focus on working farms and forests stems from the common benefits that farms create in the Adirondacks including protecting open space, providing healthy food, attracting young families to the region and contributing to the resiliency of the rural economy. Essex Farm Institute (EFI) represents the agricultural advocacy arm of the Council. The mission of EFI is to support and promote resilient, diversified farms that strengthen the health of natural and human communities in the Adirondacks.

*An employee at Juniper Hill Farm irrigates early season starts in one of their greenhouses*

*Pepper & tomato harvest at Wild Work Farm*

The signature program of EFI has been its Micro-Grants to Adirondack Farms and Value-Added Producers (Micro-Grant) program. Micro-grants support innovative agricultural businesses who use funds to drive solutions to local and global ecological challenges. Awards (averaging $1,600 per project) have been used to fund environmentally beneficial, climate-forward projects undertaken by farms and value-added producers within the Adirondack Park since 2016.

Since 2016, micro-grants are awarded each Earth Day to catalyze projects that might otherwise be financially prohibitive. **As of 2024, $241,497 in grants have been invested in agricultural operations and value-added businesses within the Park.** Nearly 150 grants have been awarded to operations in over three dozen towns across the Adirondacks.

The legacy of supporting environmental stewardship on working Adirondack farms and value-added businesses has numerous tangential benefits. Locally grown food, medicine and fiber that is sensitive to the unique ecology and character of the Park helps bolster the quality of life, economy and food supply of our region. Micro-Grants over the past decade have improved environmental, human and financial sustainability of agriculture in the Champlain Valley and across the Adirondack Park.

The following report is a snapshot of the cumulative impact of all funded projects. The report details how the Micro-Grants have impacted environmental health and benefits of Adirondack working lands. To achieve this, the report classifies and quantifies the different categories of impacts to reflect on successes and potential improvements. An investigation of the past nine years of this program yielded important insights. As a whole, the results help inform future funding structures and demonstrate the powerful impact of micro-grant projects collectively, including:

- **Reducing greenhouse gas emissions by approximately 300 metric tons through efficient innovations;**
- **Diverting over 100 tons of waste destined for the landfill which grantees converted into fertility amendments for agricultural production;**
- **Saving farm workers 2800+ hours of labor through efficiency gains;**
- **Conserving or reusing 100,000 gallons of water; and**
- **Protecting 41 acres of riparian corridor with native plantings and other interventions.**

Projects described in this report demonstrate leadership and ingenuity in addressing environmental sustainability as well as food system resiliency. The farmers and the landscapes they steward are together some of the most incredible resources inside the Blue Line. The legacy of the micro-grant program demonstrates how targeted investments protect the future resilience of our wild and cultivated environments.

This report and the impact it represents would not have been possible without the sustained support of the Klipper Family Fund who have helped shape the course of sustainable farming and working lands in the Adirondacks.

*Fall harvest at the wash station*

"The farmers and the landscapes they steward are together one of the most incredible resources inside the Blue Line. The legacy of the micro-grant program demonstrates how targeted investments protect the future resilience of our wild and cultivated environments."

# HISTORY & EVOLUTION OF MICRO-GRANTS

Over the past nine years, several key partners have helped make Micro-Grants even more effective: The Open Space Institute has served as a fiscal sponsor for the grants; Essex County Soil and Water District along with the United States Department of Agriculture (specifically Rural Energy for America Program & the Environmental Quality Incentives Program) have created opportunities for joint funding of important projects in renewable energy generation and season extension; Finally, Cornell Cooperative Extension of Essex County, the Adirondack North Country Association and the Hub on the Hill have provided technical and administrative support in reviewing applications over the years.

**2015**

In 2015, a roundtable discussion with New York State Commissioner of Ag & Markets Richard Ball was held in the North Country and farmers indicated they would be interested in small "Climate Friendly Farming" grants. The Adirondack Council heard the call and put it into motion.

**2016**

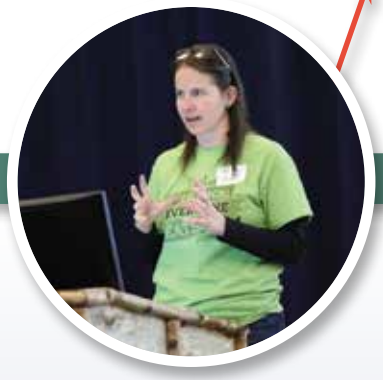
In 2016, the Klipper Family Fund committed $100,000 over five years and the Adirondack Council began to offer small grants – dubbed the "Cool Farms, Healthy Planet" Micro-Grants – to farms inside the Adirondack Park.

**2017**

In 2017, the Micro-Grant program was expanded to include small businesses.

ESSEX FARM INSTITUTE

In 2018, the Essex Farm Institute was adopted as a program of the Adirondack Council. Farmer and advocate Racey Henderson joined the Council staff.



2018

2021

In 2021, a series of changes were made to the program which included: a funding track for larger farms, a grant track for collaborative farm grants and altered the application scoring criteria to provide greater opportunity to historically marginalized groups.

2023

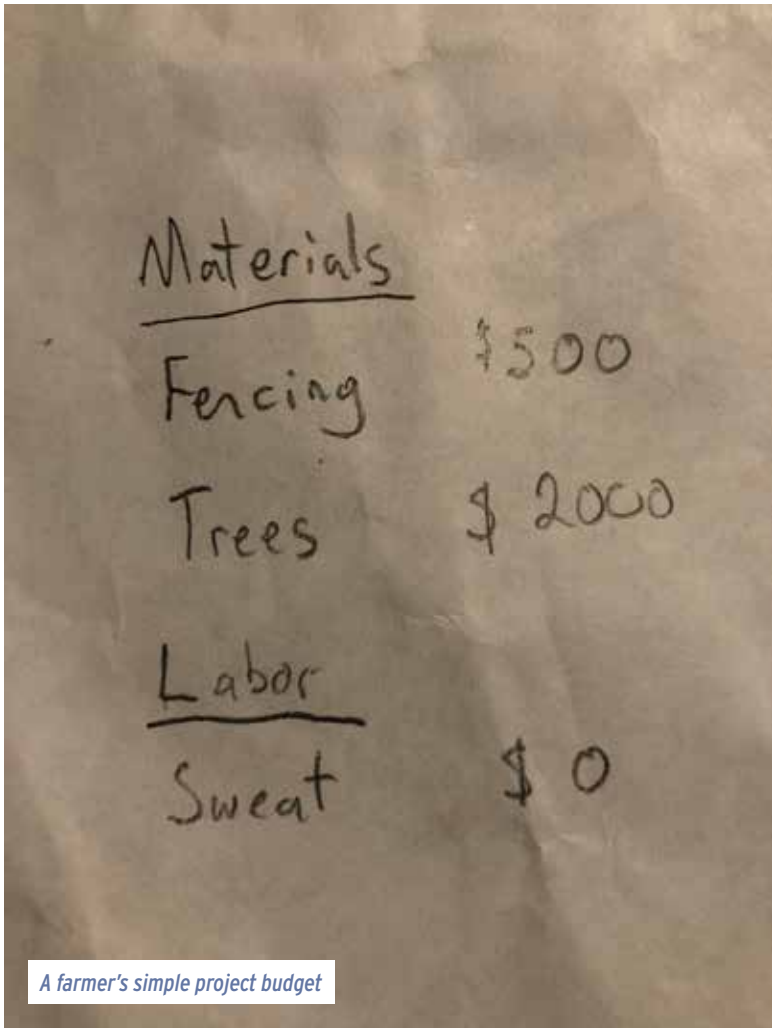
In 2023, Farm Advocate Dillon Klepetar and Sustainable Farm Intern Martha DePoy started a program assessment and began contacting and interviewing grant recipients, collecting and analyzing data, and quantifying grant impacts.

# MICRO-GRANT AWARD PROCESS

Every year, the Council invites applications for funding projects consistent with the goals of the Essex Farm Institute. Applications are welcomed from farms and value-added producers located inside the Adirondack Park. The application criteria have been updated through time to reflect the Council's commitment to the local working lands economy: value-added businesses and farms must derive 50% or more of their income from products that are grown, raised or harvested locally. Most applicants are small in size with less than 10 full-time employees and operating on 200 or fewer acres.

An average of 25 applicants apply for funding each year, of which an average of 17 applicants are awarded a grant. The total funding for the Micro-Grant program dictates the competitiveness of applications but has typically distributed between $25,000 and $30,000 in total per year.

Applications are scored with a rubric developed by Adirondack Council staff that represents several vectors of sustainability. Basic financial, acreage and business information is also collected from the applicant. The grant period is open for approximately one month after which applications are scored, ranked and recommended for funding by a team of internal staff and experts from other local food system agencies/non-profits. Once projects are selected, recipients are given one year (with some exceptions) to complete their project and submit a summary report with photographs or video of the project implementation. In addition, Council staff visit select sites to monitor projects of strategic interest.



*A farmer's simple project budget*

# SUMMARY OF PROJECTS FUNDED

A summary of the previous nine years of Micro-Grant funding within the Adirondack Park can be found in the Summary of Projects Funded.[1] There has been variability in both the average level of awarded funding and the number of projects funded. Part of this variability speaks to the crucial flexibility of the program. In 2020, the program awarded additional funding to support local farms and producers at the start of the COVID-19 pandemic. In addition, from 2020 onward, the program expanded to award applicants from larger agricultural operations up to $3,000, and projects that were led by three or more entities working together up to $8,000. In more recent years, the review committee has favored funding the most impactful projects rather than attempting to provide support to a large number of applicants.

*Pastured cows heading to the milking barn*

**SUMMARY OF PROJECTS FUNDED (2016 - 2024)**

| | Number of Projects | Average Grant Awarded |
|---|---|---|
| 2016 | 12 | $1,042 |
| 2017 | 23 | $1,202 |
| 2018 | 19 | $1,321 |
| 2019 | 18 | $1,481 |
| 2020 | 13 | $2,884 |
| 2021 | 21 | $1,410 |
| 2022 | 15 | $2,133 |
| 2023 | 12 | $2,167 |
| 2024 | 16 | $1,531 |

*Table 1. Summary of Micro-Grant projects and average project award amount by year.*

# ENVIRONMENTAL SUSTAINABILITY: PROJECT RESULTS

## Biodiversity

Projects investing in biodiversity on commercial working lands poses a unique challenge, as returns are often intangible, long-term, and tied to ecosystem services that are difficult to measure. Farms and farmland support biodiversity by creating critical valley bottom, forest edge and grassland habitat within the Park. Within the Park boundary, less than 3% of the land mass is considered arable land (due to rockiness, soil depth and soil acidity). The pockets of farmland in the Champlain Valley and elsewhere represent wildlife communities absent from most of the constitutionally protected Forest Preserve. Biodiverse habitats adjacent to agricultural land are vital to many species of birds and mammals as well as prairie and wetland flora and fauna.

*A fox in a fenced off riparian pasture at Echo Farm*

Data collected on biodiversity was aggregated, and the biodiversity impact category was measured by the number of acres regardless of the habitat type that was enhanced/protected by the 17 projects funded. Since 2016, farmers have enhanced or created over 200 acres of diverse and wildlife-friendly habitat (including silviculture, prairie, riparian wetland, etc.) using Micro-Grant funds. In order to enhance biodiversity, recipients usually incurred hard costs of purchasing native plants, fencing out sensitive habitat or paying for adjustments in how livestock are managed to accommodate for natural predators.

### PROJECT SPOTLIGHT:
***Triple Green Jade Farm & Bakery***


*Bobolink adult and nesting habitat | Larry Master, masterimages.org*

In 2018, the Council sponsored a project at Triple Green Jade Farm & Bakery in Willsboro to establish native grasses and improve diversity of legumes and forbs in their pastures. Since that time, they've noticed an emergent trend that keeps paying dividends for threatened bird species. Although difficult to quantify, the health of bobolinks – a native grassland bird species – and the consistency of their return to newly created habitats are clear indicators that the addition of taller grasses adjacent to wetlands has improved native grassland wildlife habitat.

*Planting willow saplings for erosion control on the Boquet River | Eric Teed*

## Water Quality & Water Conservation

Staff developed three types of water quality and conservation metrics (two quantitative and one qualitative) to demonstrate how farmers employ innovative strategies to: 1) limit pollution, 2) protect against runoff, and 3) conserve water used in their operations. There were 19 projects that sought to reduce runoff and 86% of all recipients included specific, quantitative figures. There were two types of water quality issues addressed with our projects: sedimentation and pollution. Sedimentation in waterways is difficult to measure without longitudinal measures or precise water quality monitoring devices, and even still, sedimentation is difficult to trace to specific sources. As such, we had to determine water quality by efforts to prevent erosion. To measure this, we calculated the acreage where erosion was addressed for each project. Water quality is also difficult to measure using self-reported data so we used qualitative assessments to determine what harmful contaminants were being diverted from water sources.

Four projects contributed to water quality conservation by directly reducing or eliminating the use of chemical treatments such as fertilizers, herbicides, and pesticides. This sub-group has a 100% response rate. Two projects involved mite treatment for honeybees and two involved replacing chemical fertilizer with organic compost. This group cannot be measured quantitatively since there is no common measurement for the chemicals within the sample. Therefore, we are measuring with qualitative data that suggests that the recipients have indeed reduced or eliminated the use of chemicals as a result of their respective projects.

The second category of water quality impact has to do with the reduction of soil/sediment runoff from the Adirondacks many watercourses.

**"Over the past nine years, the program has supported four different projects intended to establish riparian corridors through tree planting, re-establishment of native vegetation and retiring crop or grazing land on sensitive areas in the Boquet, Ausable and Saranac watersheds."**

Over the past nine years, the program has supported four different projects intended to establish riparian corridors through tree planting, re-establishment of native vegetation and retiring crop or grazing land on sensitive areas in the Boquet, Ausable and Saranac watersheds. To date, the Micro-Grant program has reduced runoff on at least 278.5 acres of land. Most of these projects involved the re-establishment of native tree and shrub species in riparian corridors while several dealt with native plantings on soils that are adjacent to livestock.

There were three other projects that conserved water. The response rate for this sub-group was 50% but all respondents provided specific, quantitative figures. To date, the Micro-Grant program has conserved at least 49,950 gallons of water. Assuming that the entire population of projects was as effective as our sampled projects, we estimate that the program has conserved a total of 99,900 gallons of water.

# ENVIRONMENTAL SUSTAINABILITY: PROJECT RESULTS

## PROJECT SPOTLIGHT:
### *Crown Point Farm and Dairy*

*Reusing dairy wash water for flower irrigation*

Crown Point Farm and Dairy is a small dairy farm and value-added business manufacturing sour cream, butter and cheese curd from their own herd and sourcing milk from a nearby organic dairy farm. The farm is set in pastoral hill farm country on the southern edge of the Champlain Valley. The owners of the business were concerned that the water used to wash their milk processing equipment daily was underutilized. Because only small amounts of the milk contaminated the water used to chill and clean the milk vessels, Mike & Michelle Kuba sought out ways to repurpose the wash water. The expense of not utilizing the water was relatively small on their balance sheet but was wasteful nonetheless. A Micro-Grant of $1500 was awarded to install a small transfer pump, a large water basin outside of the milk house and a distribution system for the farm's flower beds and livestock watering network.

## *Energy Efficiency*

*Solar hot water control panel*

Farmers and business owners are resourceful by nature, constantly searching for ways to save time, money and energy without sacrificing the quality of their product. However, some farm innovations don't "pencil out" because the initial investment is too costly or the concept has not been proven to have a return on investment. These are the two primary drivers of Micro-Grant projects directed at energy efficiency. Many farms and businesses in the Adirondacks have innovative strategies to pursue energy efficiency, which is a key component to reducing greenhouse gas emissions. Renewable energy is part of the climate mitigation strategy but only if we conserve the amount of energy that we use. Energy efficiency is relatively easy to track "before and after" measures of energy usage so long as good records are kept. Upgrading old or inefficient equipment is the most common type of project supported by the Micro-Grant program.

In supporting energy efficiency projects over the previous eight years, we were able to sample about 15% of our projects targeting energy efficiency. Because most projects are still in use, we were able to aggregate annual energy savings for the businesses who continue to recoup savings. To date, 95,361.52 kWh have been saved with Micro-Grant support – the equivalent emissions associated with taking 16 cars off the road for a year. The actual kWh savings are likely to be many times larger when considering the 85% of recipients who either could not quantify the impact or did not respond.

As farm businesses weigh investing in innovative climate and energy saving technologies and ideas, we will continue to support their efforts. Moreover, the Essex Farm Institute has also shared successes among producers so that projects that demonstrate success and "pay off" can be replicated by others. Energy efficiency projects not only reduce energy-usage-related emissions but also help businesses control energy costs which is a 'win-win'. Micro-Grant funding has consistently been used to help businesses tackle the up-front costs associated with energy efficiency upgrades. Even upgrades that offer financial savings long term may not be feasible for small farms or value-added producers.

## PROJECT SPOTLIGHT:
### *Ausable Brewing Company*

Ausable Brewing Company in Keeseville began in 2016 out of a homespun family business. Operations have grown considerably to include an exciting variety of beers on tap made from global and local ingredients. In 2021, the Adirondack Council granted the owners of the business a grant to make their beer cooling process more efficient with the purchase and installation of a jacketed brew tank. Large stainless-steel tanks for breweries are often used to hold the "wort" which is the precursor to finished fermented and filtered beer. Keeping the wort temperature consistent is a major part of making a quality product. The jacketed (insulated) wort tank helped the business save energy and money by helping the brewers to maintain proper temperatures in their vessels. And despite the dramatic growth of their production since installing the jacketed vessel, the owners were pleasantly "surprised" that there was no substantive increase in energy use.

*Charlotte Staats and owner Dan Badger of Ausable Brewing Company in front of insulated wort chiller*

"Energy efficiency projects not only reduce energy-usage-related emissions but also help businesses control energy costs which is a 'win-win'. Micro-Grant funding has consistently been used to help businesses tackle the up-front costs associated with energy efficiency upgrades."

# ENVIRONMENTAL SUSTAINABILITY: PROJECT RESULTS

## Waste Reduction

A total of 10 projects have been funded by Micro-Grants that directly address the reduction of organic and inorganic solid waste. Supporting the innovations of businesses repurposing compost, replacing disposable products with reusable ones, and/or substituting for biodegradable options has diverted a great deal of waste. A number of projects sought to reduce waste by not creating it in the first place, while most "waste reduction" projects focus on repurposing what is otherwise classified as waste. The former project class is very difficult to quantify. For instance, Micro-Grants were used to fund two projects where SolaWrap was used to replace greenhouse plastic coverings. SolaWrap is more expensive than traditional oil-based plastic but has a 30-year lifespan compared with a three-year lifespan of most greenhouse plastic. In 2024, EFI helped pilot a program to package local meat products using biodegradable shrink wrap instead of plastic. Waste diversion, however, is a much easier impact to quantify which we measured as pounds of organic waste diverted from the landfill. Estimates were obtained by surveying final reports and supplemented with thorough interviews of composting grant recipients.

*Season extension greenhouse at Tangleroot Farm*

### PROJECT SPOTLIGHT:
***Blue Line Compost and RivR Valley Regneratives***


*Blue Line Compost partners*

In total, Micro-Grant projects reducing waste reported that a total of 225,250 pounds (well over 100 tons) of waste has been kept out landfills. And because these projects are still ongoing, the impact is growing daily. There were five projects over the past eight years who were not able to document the full extent of their waste reduction. Nonetheless, those additional efforts have also undoubtedly changed the waste stream on farms and in their local community. Blue Line Compost in Saranac Lake, whose curb-side residential, municipal and institutional compost programs have been supported by Micro-Grants, is one such example. By 2024, the company's own data suggested that 789,277 pounds of food waste had been diverted, composted and used as a soil amendment.

A prime example of composting in action is RivR Valley Regeneratives (formerly the Workshop in V-ville) operated by Jennifer Perry and Jon

Norman. Both Jennifer and Jon are crusaders in composting and have a distaste for the word "waste." For them, organic solids that end up in a dumpster are an environmental resource managed in a way that renders them an environmental pollutant. In 2021, they set out to build a high flow drum composter in their shop that was to be used to collect waste from several institutional, residential and municipal sources with the goal of converting the material into a usable agricultural input. Their project alone is not only responsible for the largest impact of all the projects, it has also inspired other non-Micro-Grant businesses and individuals to start their own compost facilities. Because the couple wants to see more composting in the area, the plans they developed with support from the Adirondack Council are now "open-source" meaning that they can be used by others without as much research and development. This highlights the incalculable ripple-effect benefits that the Micro-Grant program has supported and inspired.

*A gear driven rotating drum for efficient compost making at RivR Valley Regeneratives*

## Greenhouse Gas Reduction

*Oat/field pea cover crop*

While Essex Farm Institute and the Adirondack Council are primarily concerned with the ecological balance and wild character of the Adirondack Park, both are challenged by the overarching extreme weather patterns associated with global climate change. Agricultural and local food systems present opportunities for both carbon sequestration and a reduction in greenhouse gas production. Despite generally being a "net carbon sink," producers and small businesses in the Park can lead climate change efforts by developing strategies to reduce their greenhouse gas footprint.

As such, this report combines greenhouse gas reductions stemming from conservation efforts with carbon sequestration. Examples of projects that reduce greenhouse gas include planting cover crops, switching tractors to biodiesel fuel, transitioning to rotational grazing, installing efficient food storage equipment, installing solar panels and installing "smart systems" that modulate energy-use automatically based on demand. Greenhouse gas reduction is by far the largest investment made by the Micro-Grant program over the past decade and the quantitative results reflect this support.

By doing calculations informed by the federal Environmental Protection Agency (EPA), respondents reported that their projects have reduced emissions 293.78 metric tons of carbon, which is equivalent to taking 65 cars off the road for a year. If we were to extrapolate the average impact of projects to those businesses who did not respond in enough detail to quantify impact, the likely impact of greenhouse gas reducing projects is likely closer to 400 tons.

# ENVIRONMENTAL SUSTAINABILITY: PROJECT RESULTS

## PROJECT SPOTLIGHT:

***North Country Creamery and Full and By Farm***

Some of the projects focus on substituting or retrofitting fossil fuels with greener alternatives, while a handful of projects used Micro-Grant funding to generate their own sources of renewable power. North Country Creamery has installed a 25kW solar array among their grazing operations. The array should offset the majority of the farm's grid-tied energy needs. The Micro-Grant was used for the interconnection expenses associated with connecting the photovoltaic system to the utility. At Full and By Farm, they ditched their petroleum-powered wood splitter for the electric unit pictured here. Projects in this class have a positive impact on air quality as well as reducing emissions.

*Electric log splitter at Full and By Farm*

*Rotational grazing and solar panels both reduce carbon emissions at North Country Creamery*

**"Using Environmental Protection Agency data, respondents reported that their projects collectively reduced emissions 293.78 metric tons of carbon which is equivalent to taking 65 cars off the road for a year."**

# FOOD SYSTEM RESILIENCY: PROJECT RESULTS

## *Financial Sustainability*

Buying locally continues to be the biggest consumer hurdle for farm viability that undergirds the pastoral Adirondack landscape. Farmers continue to struggle to make their farms more profitable while pursuing sustainability. The result is that many farmers need to market the food they grow directly to consumers (i.e. farmstore). Grants in this category have helped the environment by supporting new market access for farm operations that pursue sustainable production methods. **Without transparent, fair markets – small family farms cannot continue to build the food supply for immediate and long-term regional demand.** The grants committee has continually looked favorably at already-environmentally sensitive operations that are looking to grow their market share. In several cases, Micro-Grants have been used to develop direct-to-consumer channels or expand access to fresh food in rural communities. We measured this category of impact in terms of economic gains made by the business operation as a result of the Micro-Grant project.

Small and diversified farms face perhaps their most challenging moment to date: rising costs due to a small labor pool, subsidies for industrial commodities, increasing farmland property values, and a lack of transparency in the 'buy local' marketplace. The Adirondack Council will continue to advocate on behalf of the small and medium sized agricultural producers who build rural food system resiliency and protect the landscape through their sheer viability. Consumers concerned about food security and the fragmentation of habitat in the Champlain Valley and beyond can invest in critical farmscapes by purchasing their products directly. Supporting sustainable farms is an investment in the future of the Park's threatened ecological resources.

*A rural farmstore at Berube Farm and Botanicals*

Projects in the financial sustainability impact category represent a fraction of the Council's overall investment in farm and value-added businesses. Of those projects sampled, grantees were able to quantify revenue that might not have otherwise been earned. For this portion of the study, the focus was on "increase in sales" measured in dollars to discern the impact of the program on Adirondack businesses. **With 51 of 68 projects reporting the financial impact of our partnership, there was an estimated $104,019 generated for local farms and value-added businesses.** And because some of the funded projects were targeted at reducing costs (as opposed to generating revenue), roughly half of the aforementioned impact was on the expense side. Helping businesses save money has been nearly as important as helping them develop or expand sources of revenue.

# FOOD SYSTEM RESILIENCY: PROJECT RESULTS

## PROJECT SPOTLIGHT:
### *Norman Ridge Farmstead, LLC*

Norman Ridge Farmstead, LLC is a rotational grazing operation that raises beef in the Adirondacks' historical potato district around the townships of Gabriels and Vermontville. The farm itself is relatively isolated and does not have an abundance of retail outlets available to prospective customers. In 2022, Norman Ridge received $1,500 to help establish a mini farm store with an energy efficient display freezer. The farm now uses the shed for retail sale and as a self-service pickup location for online meat orders. One of the owners, Chris Neill, said that he is always surprised by the sales they can do out of the farm stand each year. They have experienced a 75% increase in sales and in their first year were able to increase sales by about $6,000.

*Norman Ridge seasonal roadside stand for beef sales*

## *Educational Value*

The educational value of a project is difficult to quantify. It is, however, no less important to the spirit of the Micro-Grant program which can have a powerful impact by sharing the value of local food, fiber and medicine within the community. Here we explore the impact of projects with an educational focus in narrative format. In total, there were 20 education-focused projects in the past eight years, though very few of them have only an educational component.


*Washing carrots for markets at Wild Work Farm*

Micro-grant projects that advance a sustainable food system through educational projects are decidedly important, irrespective of the difficulty in tracking impacts. Public and inclusive education and the intersection of public health and local food are vital steps to bring the community together around the value of a localized food system. What's more is that outreach and education regarding the food system tends to have a positive cascading effect where the initial educational value is multiplied as educated individuals continue to share and adapt their lifestyles with others in accordance with value-based assessments of the food system. In this section of the report, we present a sample of important and impactful projects and allow the reader to imagine their impacts.

## PROJECT SPOTLIGHT:
### *Craigardan*

At Craigardan — an interdisciplinary residency program that supports artists and scholars from the Adirondacks and around the world — there is a deep belief in the power of providing access to community garden spaces. Their project was able to educate the public on composting methods, soil health and other horticultural practices to improve food system literacy and food sovereignty in the community. Their thoughtfully designed raised beds allow individuals with mobility issues to assist in working with fresh food. The center in Keene, NY allows for numerous public educational opportunities on the community farm and continues to be a location for local community members to bring compost and access a fridge of free seasonal produce. And like many of the EFI projects, the raised bed effort is made possible jointly with partners. In this case, Cornell Cooperative Extension and Mountain Lake Services joined forces with the Adirondack Council to make this project possible.

*Raised beds for educational programming at Craigardan*

## *Time Efficiency*

While saving farmers and business owners is not the primary motivation for funding Micro-Grant projects, there is an implicit recognition that saving farmers time helps them become more sustainable. We analyzed projects in efficiency of energy and considered time efficiency as a helpful byproduct of sustainable or energy efficient automations. **Over eight years, the funded projects collectively saved farmers and value-added businesses 2885 hours or 260 full work-days.** These numbers not only reflect the year in which the Micro-Grant project was completed but also all the active years since the initial investment was made. When we extrapolate to the population instead of only those awardees who were able to quantify the time they saved, the impact is far greater. Assuming that the sample of respondents is representative, Micro-Grants taken together have saved farmers more than 685 work-days.

*A conveyor harvester/ cleaner for potatoes*

# FOOD SYSTEM RESILIENCY: PROJECT RESULTS

Saving work-days is crucially important in agriculture as farmers and business owners are chronically overworked during short growing seasons. If upgrades to infrastructure or transitioning to more efficient technologies can save labor-hours or prevent physical strains, farmers are empowered to continue to farm. Moreover, saving time accomplishing the same output generates income or can free up mental and physical bandwidth for other efforts. With limited workforce for labor-intensive occupations, time efficiency contributes to the general resiliency of agricultural small businesses.

*Organic corn harvested in the Champlain Valley*

> **" Over eight years, the funded projects collectively saved farmers and value-added businesses 2885 hours or 260 full work-days.."**

## PROJECT SPOTLIGHT:
### *Meadow Mountain Farm*

Christmas trees do not create food security in the region yet provide a great semi-wooded habitat for wild animals who thrive among plantings of coniferous species. Moreover, most lands in the Adirondack Park have significant slopes which prohibit many forms of Christmas tree production. As such, tree and nursery crops represent a sector of agriculture with significant growth potential within the Park. Meadow Mountain Farm is a multi-generational Christmas tree, wreath and maple sugar business located in Moriah. Meadow Mountain received a grant in 2023 to purchase a commercial tree planter which streamlined their Christmas tree planting efforts. After using the tree planter, the family reported shaving two days off of their annual planting time.

*Owners of the Meadow and Mountain Farm display newly planted Christmas trees*

## Increased Productivity and Local Food Security

Productivity is the lifeblood of farm operations. Increased productivity allows farms to stay competitive and deliver reliable products to consumers. However, a major limitation of farming in the Adirondacks is the relatively short growing season, long distances and low accessibility that separate farmers and consumers. Producers must be creative to solve the limitations of farming in a harsh and geographically isolated region. Projects that address food security or productivity were grouped together because both result in a greater amount of food or value-added products being distributed in the Adirondacks. Micro-Grants have provided tools and technologies to extend the growing season to feed local consumers. This has resulted in more calories/average meal equivalency for consumers and has also helped open up new local food access points, some of which were provided at low or no-cost to individuals in need.

Conventionally, extending the growing season can be energy intensive and damaging to the environment. For example, large greenhouse structures and winter housing for livestock can result in the burning of large quantities of fossil fuels. In many cases, these options are quicker, cheaper and require relatively little infrastructure. The Micro-Grant program has sought to intervene and support more environmentally-friendly solutions to extend the growing season for eight projects to bolster local food supply through winter months and increase income for producers. In some cases, money from the Adirondack Council was used to meet funding gaps in USDA programming for season extension tools like high tunnels and greenhouses. Many of these projects included solar heating as a primary justification for applying to the program which traditionally has focused on environmental issues.

*Value added products at the Clover Meade Farmstore*

Another bottleneck in local food consumption is the limited availability of prepared meals that are made with primarily local ingredients. Micro-Grants have also bolstered prepared food (to-go meals) and capacity for about a half-dozen value-added producers. Many rural households lack the know-how, time or kitchen facilities to prepare scratch-made food at home. Roughly a half dozen awards have gone to value-added producers seeking to address this gap. These projects have enabled an additional 19,580 meals to be made from local ingredients, most of which were distributed during the pandemic.

In total, Micro-Grant projects that have a known result of increased productivity and increased access have created 7,300 additional pounds of food (mostly produce). According to the USDA this equates to just over

# FOOD SYSTEM RESILIENCY: PROJECT RESULTS

6,000 meals made with exclusively local ingredients. If this same impact were to be extended to producers who did not track their additional productivity, the result would be about six times as great.

Over the last eight years, Micro-Grants have been used to increase productivity by about 45,000 additional pounds food. In addition, Mace Chasm Farm, which produces livestock used a grant to expand their silvopasture pork operation, however, the additional meat produced was not easily traceable. Improved tracking from applicants would be useful to determine the number of additional calories produced or consumed in Adirondack communities.

## PROJECT SPOTLIGHT:
### *Tangleroot Farm*

*Sustainable Farm Intern Martha Depoy at Tangleroot Farm's hightunnel*

Tangleroot Farm in Essex is an owner-operated vegetable operation growing on roughly 2.5 acres. In 2016, the farm was awarded a grant to install several season-extending hoop houses. Since that time, the farm has produced an additional 17,850 pounds of produce from those hoop houses from November until May. The story of Tangleroot Farm is not unique. Micro-Grants have helped expand all-season vegetable, herb and medicine production at other farms like Oregano Flats, Twin Hills Farm, Forever Wild Apothecary, Berube Botanicals, Wild Work Farm and Juniper Hill Farm.

# CONCLUSION

Future funding of farmers and value-added business owners are crucial investments that keep conservation at the forefront of innovation in the Adirondacks. Many awardees said the small investment of EFI was the catalyst or "tipping point" for getting projects off the ground. However, through monitoring visits and email correspondence related to this report, farmers reported hardships in their vocation. Facing scarce labor, marketing challenges, rising costs, federal subsidies to industrial agribusiness competitors and housing shortages; these pressures will continue to stifle farm viability and conservation practices within the Park. With that said, **farmers are at the forefront of ingenuity as the Micro-Grant program demonstrates. Rather than prescriptive practices for sustainability, the Adirondack Council's support for farms is flexible to produce unique, farmer-led initiatives that achieve outcomes consistent with it's broader mission.**

Operations that cultivate agricultural and forestry products in environmentally sustainable ways create one pathway for responsible private land use that preserves the integrity of the Adirondack Park's resources. The efficacy of projects detailed herein lays the groundwork for the amount and type of support that operations need to provide basic goods such as food, fiber and medicine to our communities without compromising the future viability of the region or planet. Essex Farm Institute has a diverse history of advocacy on behalf of farms. However, a consistent trend has emerged with respect to the broader Adirondack Council goals of conserving the ecological integrity and wild character of the Park: **the viability of small family farms is a key determinant of whether agricultural lands are converted. As a result, the grant program has been supportive of projects that improve the market access of thoughtfully produced goods as an indirect solution to open space protection.** By making farms more financially viable, the grants help prevent them from being abandoned, developed or becoming hobby farms. The investment of Micro-Grants over the past 8 years has focused heavily on climate change mitigation, conservation, financial stability and water quality. Taken together, these projects represent impactful work carried out by farmers and value-added businesses that enhance the resiliency of the local food system, Adirondack communities and the Park's shared environment.

*Sara Kurak owner of Full and By Farm at the reins of a horse-powered manure spreader*

# METHODOLOGY: CLASSIFICATION OF IMPACT

To produce this report, Martha DePoy (Clarence Petty Intern) and Dillon Klepetar (Farm Advocate) collected detailed responses, reviewed data and conducted site visits for a subset of past Micro-Grant recipients who had received funding between 2016 and 2023. The study design and metrics were developed to address the specific goals of the program. Completed projects from the previous 8 years[2] were categorized individually based on the primary goals defined by the recipient in applications. To create categories of impact that were exhaustive, a total of nine classifications were established. Each category addresses the overarching goals of Environmental Sustainability or Food System Resiliency. A summary of the categories and metrics of impact are listed here. A further breakdown and justification for each category can be found in the following section.

## Environmental Sustainability

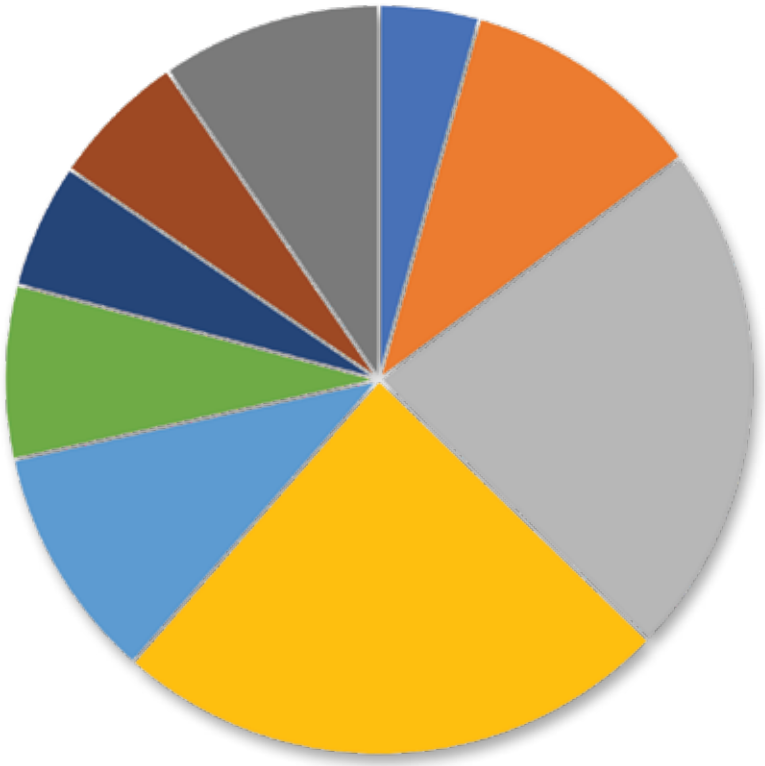
- **INCREASED BIODIVERSITY/HABITAT |** Number of acres of biodiverse habitat created/protected.
- **WATER QUALITY/CONSERVATION |** Three types of water conservation metrics were identified:
  - Sedimentation reduced by riparian/wetland zone protection measured in land acres,
  - Water conserved, measured in gallons, and
  - Qualitative measure of reduced chemical runoff.
- **ENERGY EFFICIENCY |** Total Kilowatt-hours saved.
- **WASTE REDUCTION/FERTILITY |** Organic and inorganic pounds (lbs) taken out of waste stream and repurposed.
- **GREENHOUSE GAS REDUCTION/SEQUESTRATION |** Total tons of CO2 reduced or sequestered and equivalency.[3]

## Food System Resiliency

- **FINANCIAL SUSTAINABILITY |** U.S. dollars made or saved per year current vs. before project implementation which was used to demonstrate how long it will take for the project to pay itself off/start saving money.
- **EDUCATIONAL VALUE |** Narratives, testimonials and qualitative evaluations of how many people were reached with new information or how individuals' behaviors had been changed as a result of a Micro-Grant funded educational project.
- **TIME EFFICIENCY |** Total hours of farmers, farmworkers, business operators and employees saved.
- **INCREASED YIELDS/PRODUCTIVITY & FOOD SECURITY |** Projects that address food insecurity by increasing producers ability to either provide more food for more of the growing season or enable greater access to food by providing new low or no-cost channels for meal access. While both of these metrics contribute to food security in different ways, they can both be converted into one measure: pounds of additional food.
  - Increase in the total number of pounds of food produced.
  - Qualitative assessment of new types of food products available in the region or available to groups who would not normally have access to local food.

Because some projects have multiple related impact goals, certain grants are represented for multiple categories in the chart on the right. As the chart indicates, climate change mitigation and financial sustainability comprise almost half of all financial investments in Micro-Grant projects. This finding is consistent with the stated goals of the program which are to support small and/or diversified farms who pursue environmentally beneficial projects.

## Investment Share by Impact Category



### Investment Share by Impact Category Key

- Waste Reduction
- Water Conservation
- Greenhouse Gas Reduction
- Financial Sustainability
- Energy Efficiency
- Educational Value
- Biodiversity
- Time Efficiency
- Increased Productivity & Food Security

*Figure 1. Financial sustainability, greenhouse gas reduction, water conservation, and energy efficiency emerged as the top categories of impacts for Micro-Grant projects. Note that because a number of projects each year have multiple categories of impact, the total number of projects observed in each category exceeds the total number of funded projects in a given year. That is because projects like Christian Brothers Farm who used a Micro-Grant purchased a twin-row hay rake in 2019 to cut down on emissions. The new equipment cut fossil fuel pollution in half, decreased mowing time, decreased field compaction and saved the business money. Projects like this would be classified as meeting both food system resiliency and environmental sustainability goals, resulting in multiple categories of impact.*

# METHODOLOGY: ANALYSIS & LIMITATIONS

To determine the quantitative and qualitative impact of the previous 149 Micro-Grant projects awarded between 2016 - 2023, data was collected through final reports, email solicitations, in-person visits, phone calls and first-hand knowledge. All but about a dozen projects were evaluated using information gathered during 2023 and 2024. To learn more about completed projects, every project leader was asked for follow-up information that would highlight the tangible outcome(s) of the life of the project. Only about half of the original recipients that responded had enough detailed information to be included in the dataset or were still operating the business. In total, 86 projects were able to be analyzed based on recipient responses. However, most of the remaining projects likely had similar results but were not able to provide enough documentation of the anticipated impact.

For every grant project, the goals of the applications were classified according to the categories provided. Grant recipients were then asked to characterize the estimated impact using the category metrics. For projects or applicants who could not isolate the impact, further questions were asked to approximate the impact. For example, if a project was intended to save energy, applicants analyze their electricity bills before and after the project was established. For projects that implemented water conservation or greenhouse gas reduction, staff used U.S. and state agency research to convert the impacts that recipients could self-report. In many cases, staff worked with the producer or business in real-time to calculate the true impact.

A major limiting factor in measuring the full impact of Micro-Grant funding has been the lack of response from former awardees because farmers and business owners simply cannot afford to spend the time to calculate the impacts. As such, it is difficult to accurately extrapolate to non-respondents even though their completed projects likely share similar levels of impact. Overall, about half of former recipients regardless of what type of project they pursued. Because of the low confidence interval, results were not extended to the whole population of completed projects.

Without all of the awards represented, the impacts reported in the next section likely under-represent the actual impacts of projects in totality. Nevertheless, the known impacts by themselves are impressive. Because non-responses from former recipients were likely not random, caution is needed in extending the average impact of respondents to those who did not respond or who could not adequately capture how the project had changed outcomes.

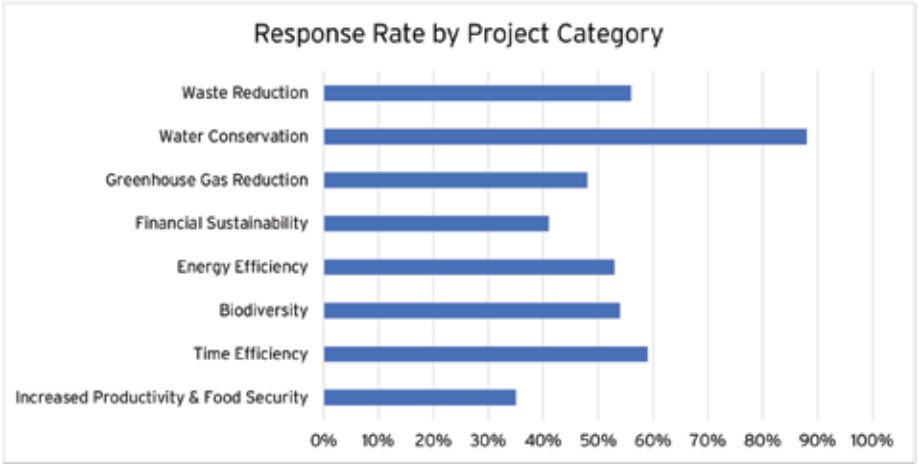



*Figure 2. Awardee response rate by category, highlighting the highest response rate for projects within water conservation, time efficiency, and waste reduction impact categories.*

Over the years, priorities for environmental, human and financial issues have changed for the farmers of the Adirondacks and the communities they feed. Due to the COVID-19 pandemic, farmers appealed for funding of sustainability initiatives that would also enhance the food security of the region. In 2020-21, there was a spike in projects addressing resiliency

in the food supply. Another noteworthy trend has been the emergence of composting as a dominant project focus. This pattern is consistent with a national effort to better convert food waste into agricultural uses. Farmers and small businesses receiving Micro-Grants have emerged as leaders in keeping waste, from table scrabs to cull fat from livestock, out of the conventional waste stream.

The types of projects that requested funding have also changed. As the chart below demonstrates, Micro-Grants are an adaptive source of funding for applicants helping meet the most pressing issues identified by applicants themselves and the grant selection committee. Early in the program, support for establishing new farms in the region was more prominent. Today, a variety of project goals are supported annually, but are generally dominated by projects that reduce greenhouse gas emissions.

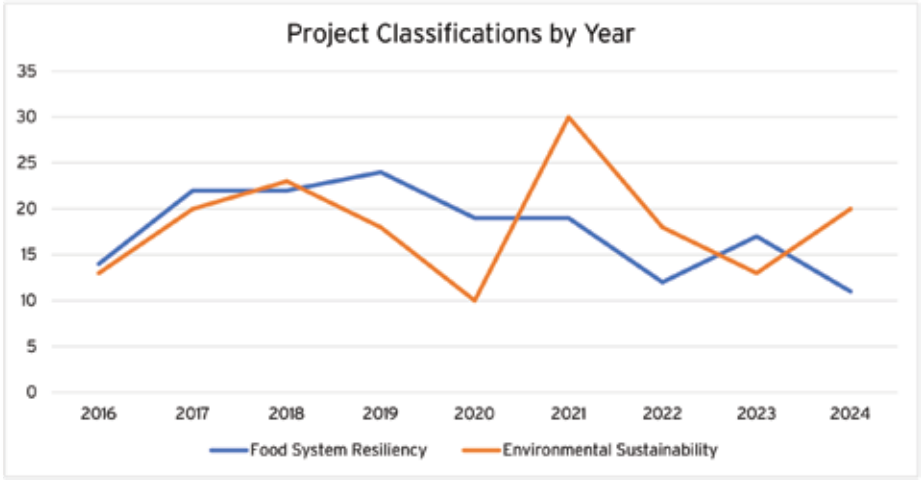



*Figure 3. Project Funding Focus by Year demonstrating projects that achieve both overarching goals of the program. Note: Because awarded projects can be classified in multiple categories, the overall number of projects listed in each year exceeds the number of individual awards distributed.*

*Adirondack Naturals showcasing a healing balm*

"Over the years, priorities for environmental, human and financial issues have changed for the farmers of the Adirondacks and the communities they feed. Due to the COVID-19 pandemic, farmers appealed for funding of sustainability initiatives that would also enhance the food security of the region."

# AGRICULTURAL SUSTAINABILITY IN THE ADIRONDACKS

*Micro-Grant Program Impact Assessment (2016 - 2023)*

ADIRONDACK COUNCIL
PRESERVING WATER, AIR AND WILDLANDS

Report produced by Dillon Klepetar, Farm Advocate
April 2025