Sample Grant Application: Urban Farm

Maryland's 2024 Healthy Soils Competitive Fund

Competitive Fund Narrative
Healthy Soils Grant 2024 - MD Dept of Ag

1. What challenges are you facing on your farm that you wish to address by adopting eligible conservation practices?

Improving our foundation of nutrient dense soil is a critical infrastructure need for Farm is facing several challenges that will be addressed by adopting soil health and conservation practices on the farm.

Pests/ Plagues Impacting Food Production:

Pest outbreaks affect our production and financial success. Nutrient imbalances can weaken plants, making them more susceptible to pests and diseases. Two pests we continue to have issues with are Spotted lanternflies and Harlequins. Continuing on from the Spring planting season, we have been working to mitigate the spread of the invasive Spotted lanternfly on our farm. “Spotted lanternfly feeds on a wide range of fruit, ornamental and woody trees, with tree-of-heaven being one of the preferred hosts, Spotted lanternflies are invasive and can be spread long distances by people who move infested material or items containing egg masses" (USDA APHIS | Spotted Lanternfly). One of our missions is to provide residents with free access to a wide array of fruit and nut trees at the farm and along their walkways. This project has started and we have young trees growing on and off site that are impacted by Spotted lanternflies.

The Harlequin, feeds heavily on vegetable crops in the family Brassicaceae, such as cabbage, kale, mustard, and collards, all of which we grow. This pest reduces the quality and volume of our food by making plants inedible for public consumption. Every market season our brassicas are affected and we end up discarding a significant fraction of the produce, limiting the availability to residents and our overall profit. We do not use any chemical pesticides and our solutions are currently preventative but we would like to develop processes around this. Blossom end rot is also a common problem faced in managing its tomato beds especially as the season progresses – by utilizing a powdered dolomite lime, hydrolyzed fish bone meal or other calcium carbonate sources and ensuring a well balanced soil together with MD Department of Agriculture soil testing program we hope to eliminate blossom end rot.

Cost of Inputs:

Having compost inputs is expensive and we struggle with consistent economic capital to consistently purchase compost made off site as well as lack of social capital (individuals working and volunteering on the farm) that do not have the appropriate knowledge to produce our own compost in a scale large enough for the needs of our operation. The primary input to the soil

used is finished mushroom compost. The expenses incurred on an annual basis are high, further limiting the farmers' capacity to spend time and other resources on implementing the conservation practices. The farm does not have the structure in place to effectively compost organic material that we produce, which restricts our ability to have a method of recycling good soil nutrients back in the ground for long term production.

Challenges with the Maintenance of Our Community Compost Program:

We have a steady supply of food scraps from a few sources. A fruit vendor brings an abundant supply of tropical fruit trim waste and coconut husks to the farm on a weekly basis. The farm has a regular supply of crop and food waste, and many reliable residents drop by the farm regularly to bring their food scraps and the interest is growing. The challenge has been maintaining a regular schedule amongst the core team or identifying one specific volunteer to maintain the 3 bin system and ensure that the system is kept neat, clean and without odors.

This grant would enable us to establish a paid part-time position for a specific person to be accountable for maintaining the composting systems, including collecting leaves during the fall and managing free delivery of wood chips throughout the year to help maintain the composting systems including an existing 3 bin system, a BEAM composting system and a small biodigester. BEAM composting stands for Biologically Enhanced Agricultural Management and utilizes a simple, passive aerated composting process that eliminates the need for turning compost by integrating a series of perforated tubes into the compost. This creates a fungal dominated compost and eliminates off-gassing of methane and greatly increases carbon sequestration.

Our three tiered approach also allows us to deal with different waste sources including poultry litter (for the BEAM compost), home compost (which if liquid or smelly) can go in the biodigester, farm compost, wood chips and leaves.

Global and Regional Challenges:

Aside from the specific challenges we face there are global, regional and local challenges that impact our farm as well. Climate change and the reduction of topsoil worldwide are two challenges that we face as a result of not only issues in but also global and regional concerns that we can aid in addressing through our urban farm. In we have experienced numerous impacts from climate change including intermittent periods of drought, extreme heat, extreme rain, flooding, and reduced levels of available sunlight due to the "purple and red alert" haze and air quality days from the smoke of the Canadian wildfires. Each of these climate impacts affects our crop production, degree of moisture in the soil, quality of the food we produce, the health of the plants, and their resilience /ability to withstand extreme weather conditions. Furthermore, these impacts are anticipated to increase in degree and accelerate in pace.

As a result of real estate and infrastructure development including construction and installation of housing, commercial buildings and related roads and underground gas, water, sewer and telecommunications lines, urban communities in have lost a significant amount of topsoil due to erosion, runoff, and the degradation and destruction of the various

ecosystems including the soil, forest and wetlands. This is evident in the quality of the soil on some of the vacant lots that the farm uses to grow food. Depletion of topsoil, which creates excess runoff, as we are within Chesapeake watershed and being in an urban setting adds to the chances that runoff containing pollutants are added to our watersheds.
“Nutrient and sediment pollution degrades the watershed aquatic life. Excess nutrients and sediments are the primary source of pollution in the Chesapeake Bay.”

2. What practice(s) are you proposing to adopt to address these challenges?

To address these challenges, we will strengthen and scale our community compost program at the farm and gradually begin to supplement and replace the mushroom compost that we purchase with our on-farm finished compost, steadily increasing our application of this compost to more and more farm plots across the two acres of our farm. We expect the application of this compost to improve soil health and the health of our crops. With healthier crops, the less pest and disease pressure we will have. We also plan to strengthen and expand our community network between the farm and residents to collect natural inputs to create viable compost output that will be recycled throughout the farm to increase soil nutrients.

We will also maintain a select number of farm plots that do not receive the on-farm finished compost as “control plots” which we and the MDA can use to compare the outcomes of our soil test analyses over the 3 years of the project.

By the end of the 3 year grant period, we will continue to sustain the financial viability of the project by utilizing the money saved from supplementing and replacing the mushroom compost with our on-farm compost and these savings will be used to continue to pay the part-time farmer to maintain the compost program at the farm.

3. How do you plan to manage the proposed conservation practice(s)? (For example, you may intend to adopt Integrated Pest Management and begin to monitor fields for pest and disease pressure, selectively manage issues instead of broadly spraying at predetermined times) If appropriate for your project, please include a timeline illustrating how your practice(s) will be implemented over the three-year grant period.

Work Plan and Timeline				
Year	**Expand Community Compost Program**	**Activities**	**Training**	**Measure and Track Outcomes**
Yr 1	Coordinators host educational	Repair and upgrade the existing 3 bin	Introductory training to Lead and Co-Lead - by	Collaborate with MDA to

	events for residents, reach community via social media, farmers markets, food box giveaways, and farm programs Provide support during resident compost drop-off Educate residents during community drop-offs Create spreadsheet to track compost drop-off data (Basic resident information) Track Year 1 end results for adjustments	system, add BEAM composter system Train farmers in digester use and and composting operations Apply finished compost to farm plots Maintain specific farm plots without compost amendment as control plots for soil test comparisons Also purchase the home biogas digester	with assistance from agronomists /technical advisors at Ridge to Reefs Lead and Co-Lead train Junior Urban Farmers [paid through youthworks] in the following: Trainings include: - Compost training using 3 bin system, BEAM composting system and home biogas digester - Applications of compost to soil on farm plots - Soil Health 101 - Use of biogas in cooking	document and track soil test results Record amounts of food waste entered into digester Record amounts of compost produced Document amount and farm plot locations of compost applied Write year-end summary of work done and data collected Work with MDA to share success stories and lessons learned
Yr 2	Continue resident compost drop-off Host community event centered around soil health and composting to show residents their contributions at work Track Year 2 end results for adjustments	Maintain 3 bin compost system, BEAM compost and home biogas digester Continue to apply finished compost to farm plots Maintain specific farm plots without compost amendment as control plots for soil test comparisons	Lead and Co-Lead train Junior Urban Farmers [paid through youthworks] in the following: Trainings include: - Compost training using 3 bin system, BEAM composting system and home biogas digester - Applications of compost to soil on farm plots - Soil Health 101 - Use of biogas in cooking	Collaborate with MDA to document and track soil test results Record amounts of food waste entered into digester Record amounts of compost produced Write year-end report Work with MDA to share success stories and

				lessons learned
Yr 3	Continue resident drop-off Host community event centered around soil health and composting to show residents their contributions at work Track Year 3 end results for adjustments Plan for expanding collection to partner schools in	Maintain 3 bin compost system, BEAM compost and home biogas digester Continue to apply finished compost to farm plots Maintain specific farm plots without compost amendment as control plots for soil test comparisons	Lead and Co-Lead train Junior Urban Farmers [paid through youthworks] in the following: Trainings include: - Compost training using 3 bin system, BEAM composting system and home biogas digester - Applications of compost to soil on farm plots - Soil Health 101 - Use of biogas in cooking Host Field Day to educate and demonstrate to other farmers our composting systems and soil health outcomes Participate in information sharing / and info sharing event	Collaborate with MDA to document and track soil test results Record amounts of compost produced and applied to farm plots Consolidate 3 years of data to analyze Track Year 3 end results for adjustments Write a final grant report Work with MDA to share success stories and lessons learned

4. How will managing the proposed conservation practice(s) in this way address the challenges you are facing? What are you hoping the outcomes will be? (For example, you may be hoping to increase soil biological activity, organic matter, soil structure, and/or water holding capacity, among other metrics)

The application of compost to the soil addresses the challenges we are facing on the farm in several ways. Compost creation and application, similar to what we have proposed, improves the soil's ability to hold nutrients, soil moisture and carbon and we expect this to benefit the quality and quantity of the produce we grow at the farm. We expect the application of this compost to improve and maintain soil organic matter and reduce dependence on outside inputs (mushroom compost) such that we can financially sustain the initiative by redirecting the funds formerly spent on mushroom compost to fund the Compost Lead Coordinator and ideally the Compost Co-Lead Co-coordinator. We also expect that this practice will improve the

structure and health of our soil because we will be adding more organic matter. This approach will also help improve the rigor of the plants themselves to address pests and plagues and create healthier produce.

5. How will the proposed management sequester carbon and/or reduce greenhouse gas emissions? How are you estimating the benefits (e.g., reduction in number of equipment or tillage passes, reduction in carbon intensive inputs, COMET modeling, etc.)?

There are three major ways this plan will sequester carbon and reduce greenhouse gas emissions. First, it is known that decomposing organic waste in landfills results in greenhouse gas emissions but by turning food waste into compost, these emissions can be reduced by 50% or more. Second, fungal dominated compost generated through BEAM composting sequesters carbon in mycorrhizal fungi. Third, the BioGas unit creates clean gas that can be used in cooking at the farm and reduces the release of climate gasses. We expect that by increasing the amount of compost that we apply on our farm we will be able to sequester more carbon and limit greenhouse gas emissions that come from decomposing organic waste. In order to estimate the benefits of this project, we plan to record the weight of the organic waste that we will compost in addition to recording the weight of the liquid compost that we are able to apply. During the annual soil tests, the MDA will be able to test plots where we have applied our solid and liquid composts and compare those results to our control plots.

6. How will you or other farmers potentially benefit from the outcomes of the proposed project? Do you plan on expanding implementation to other fields in your operation or sharing information with other farmers in the future?

We will eventually expand our composting operation if this project runs smoothly and apply our own liquid and solid composts across all our plots and also allow our neighbors to have some compost for their home gardens. On our field day and in our summary report we will share our methods and lessons learned. We also will share knowledge and techniques during field visits from other farmers (each year we normally have at least 10 farmers/urban farmers visit the farm). We will share passive composting techniques, compost tea preparation and information on strategies for sourcing composting inputs and on-farm fertility locally.

7. Are you willing to work with MDA over the course of the grant term to share success stories and lessons learned? How would you be willing to share that information (e.g., data sharing, hosting a field day, or being a part of another information sharing event)

Farm is always open to working and sharing information with other farmers, local organizations, and the MDA. We will host at least one field day during the project grant period, share data and a project summary with lessons learned, participate in an information sharing event, and mention these efforts in speaking engagements, on social media, on our website, and in our newsletters.

8. If you are proposing a research project, what farms are you working with? Please be sure to identify specific partners and submit maps of implementation areas.

We are not proposing a research project within this grant application with MDA.

BUDGET:

Item	**MDA Grant Request**	**Other funding sources**
Labor Cost **(include estimated labor hours)** Compost Lead Coordinator - $28,800 ($20/hour x 1,440 total hours = during 6 months/year x 3 years) Compost Co-Lead Co-Coordinator - $10,000 ($20/hour x 500 total hours = during 6 months/year May - Oct x 3 years) Ridge to Reefs, Technical Support - $3,000 (67 total hours x $45/hour) Data Collectors - $1000 (50 hours total x $20/hour Community Compost Coordinator - $500 (25 hours x $20/hour)	Total: $43,300	25 Youthworks employees (beginning in July, 5 hrs/day x 5 days/wk x 5 weeks) = $15/hr, 125 hrs each = $46,875 total per year based on 25 youth Youthworks Coordinator - $2,500 (125 hours x $20/hour) (Morgan State University via Mellon grant) Compost Operators - $3,000 (150 hours total x $20/hour) (Pimlico Community Development Authority Grant) TOTAL In-Kind: $49,375 TOTAL Other Grant Funding: $3,000

Fringe/Benefits $	N/A	N/A
Materials $ One Home Biogas 6 unit = $1775 (for food and farm organic waste and chicken manure) Supplies for Upgrading Compost System (Lumber, Screws, Tools, Gloves, etc.): $4,925	Total Materials: $6,700	BEAM composting system (aerobic) - ($1000) (Donation from Ridge to Reefs)
TOTAL: $50,000		Total In-Kind: $50,375 Total Other Funds: $3,000 —--------- Total Other: $53,375

Attachments included: