

**Sample Grant Application: Silvopasture Operation**  
**Maryland's 2024 Healthy Soils Competitive Fund**

**STATE OF MARYLAND**  
**MARYLAND DEPARTMENT OF AGRICULTURE**

**APPLICATION FOR FINANCIAL ASSISTANCE: PROJECT BUDGET**  
**Healthy Soils Competitive Fund 2024**

Please complete the project budget table below and outline expected costs of implementation over the next three years. Costs described should be specific to the proposed practice(s) and associated management. No overhead or indirect costs are eligible. Only complete rows as necessary, as not every item listed will be relevant to every application. Be sure that the submitted project narrative and budget justify one another.

**Please provide the best available information to date on the Project.**

Item	MDA Grant Request	Other funding sources
<b>Labor Cost \$</b> 100+ Hours covered for removing fence, mowing/ weed whacking, watering, and general maintaining trees as they establish  <b>(include estimated labor hours)</b>	\$0	N/A, Provided by co-owners
<b>Fringe/Benefits \$</b>	\$0	
<b>Materials \$</b>	\$0	

<b>Direct Expenses \$</b>	\$0	
<b>Subcontractor \$ (include sub contractor name and value of service)</b>  Berms and swales along windbreak and nut silvopasture Village Gardeners Plant materials and planting windbreak Trees for Graziers Design, Tree stock, tree guards, shelters, stakes, layout/planting, polywire protection, vole deterrent, mulch	\$3,240  \$16,600  \$39,967.40	We plan to apply for additional grants offered by the Nature Conservancy and the Edwards Mother Earth Foundation . Otherwise, this project is self-funded.
<b>Travel \$</b>  (itemize by mileage, meals, lodging, etc.)	\$0	
<b>Other Expenses \$</b>  Site Preparation- Removal of dilapidated fence with diesel tractor and disposal of treated wood	\$0	TBD
<b>TOTAL</b>	\$50,000	\$9,807.40 + personal labor

Since founding Farm in 2020, we focused on reverting an old horse-boarding facility to a vibrant piece of land, supporting natural systems at all levels. We hit the ground running to build a resilient farmstead to support our family and community. Since then, we have implemented agroforestry, regenerative farming, soil health and permaculture principles, as well as restored wildlife habitat. We have removed invasive species and planted 400 native trees along our

property line and as a buffer around a stream, designed a rain garden to treat water from our roof, built a permeable patio with a small conservation garden, planted a 15,000-square-foot food forest with windbreak/pesticide buffer, planted a 200-foot edible hedge with pollinator garden and planted two, half-acre native wildflower meadows to provide forage for pollinators and birds. Our ultimate goal is to produce a relatively closed system where we are self-reliantly providing for the needs of our family, producing highly nutritious food for the community, and creating a sanctuary for wildlife to share this property.

Each year, we have added a new animal (or a child) to the farm—first starting with honey bees, then free-ranging ducks and a guardian goose, and now pasture-raised broiler chickens. In the next few years, we plan to add pasture-raised beef to our operation and believe many agroforestry methods can be applied to help us meet our goals of self-reliance and resiliency.

This project focuses on establishing two silvopastures and a windbreak on our property. High winds coming from Road are a major issue causing destruction of property and vegetation and discomfort for the animals. We have designed a dense windbreak composed of conifers with additional layers of beneficial native trees, shrubs, and flowering groundcovers to support pollinators and other wildlife while providing this much-needed protection for the cattle. Additional excavation work is planned to create a small berm and swale system to both help hydrate the plants as they establish and mitigate issues with Road flooding in front of our property during heavy rain events and creating soggy fields.

We will rotationally graze 4-6 beef cattle on our front two pastures. The silvopasture trees have been selected to provide highly nutritional forage at various times of year—limiting our need to source/purchase hay—while also improving the soil fertility by fixing nitrogen and other nutrients and preventing soil erosion. We are planting another small silvopasture with a focus on producing tree crops like chestnuts, apples, and mulberries. The trees will also provide shade for beef cattle and cool season forages, which suffer tremendously during the hottest days of summer. The trees planted at this density will actually increase our total forage production while also minimizing heat stress on the cattle, resulting in greater weight gain efficiency and carrying capacity of the land. We anticipate all of these plantings to be permanent, therefore building soil health for the long-term.

We have selected to rotationally graze the silvopasture, preferencing smaller paddocks and more-frequent movement to allow for greater rest periods and regrowth, minimize parasite load and other issues mitigated by frequent moving of the animals to fresh paddocks. There are opportunities to pasture additional animals, such as sheep or poultry through these paddocks on a delay to maximize the per-acre yield and provide additional pest management for these areas.

Silvopasture provides one of the most powerful agricultural tools for building soil health and consequently sequestering carbon. Project Drawdown, a well-researched international book and review of carbon sequestering techniques, lists silvopasture as the agricultural practice with the highest potential for carbon sequestration worldwide, with an average of ~2 tons of carbon sequestered per acre per year. Because COMET planner does not model carbon sequestration we cannot accurately predict the tons this silvopasture would sequester. However, given the dense windbreaks, multi-layered hedgerows, and thick planting of willows and riparian trees within the silvopasture the overall tree totals and sequestration rate should be high. Carbon

sequestration will come from the increased biomass of the trees, deep roots, and increased soil function that will result in greater and greater soil organic matter.

Silvopasture meets all of the 4 soil health principles on multiple levels. The light canopy of trees helps decrease the erosive force of rain while also increasing the total biomass and forage production on each acre. The fallen leaves act as a light mulch each fall to provide organic matter and nutrition for soil biota. The roots of the trees delve deeper into the soil profile than any other agricultural plant, holding soil, increasing mycorrhizal fungi populations and their soil-building properties, increasing the depth of the rhizosphere that helps soil biology thrive, and bringing water and nutrients to the surface where they are accessible to forages and soil life. The roots are always there and so soil life can survive through the winter and jumpstart earlier in the spring as the soil warms. The diversity of trees planted in this silvopasture means there will be a greater diversity of micro and macrobiota as well. From increased bird and pollinator populations to increased microbial diversity. All of this diversity, soil cover, living roots and habitat, and decreased disturbance from the integration of working trees into the farm landscape means increased ecological relationships, diversity and therefore farm resiliency from weather and climate disruptions.

We are adding animals to our farm slowly and with intention, trying to use this to our advantage with regards to establishing trees and shrubs. The more quickly we plant our trees—favoring a single planting rather than a phased approach—the more attainable our goal becomes. We limit the number of years spent establishing the trees and will have the benefits of the windbreak, shade, and nutritional fodder in place for the animals when they arrive rather than spending additional time and resources protecting saplings and creating temporary solutions for the animals' requirements that are otherwise being addressed through this project.

A major issue on our farm is “man-power.” There are two of us and we are timing our animal production to coincide with both children entering school full-time. At that point, will manage the daily animal and agriculture production and marketing and will continue to work on the farm on evenings and weekends. We have taken great care in designing our systems to reflect our physical and time limitations. This grant would allow us to hire support for planting these trees in a single planting so that we spend 1-2 years of focused watering, weed suppression, and tree protection maintenance in advance of introducing animals rather than this process taking many years.

We have worked with multiple professionals in order to ensure that our plans will both realistically meet our objectives and implement established best practices. Our hope is that through thorough, advanced planning and execution we can avoid costly mistakes and reduce the number of inevitable lessons learned. We are working with an Agroforestry Consultant with Trees for Graziers, to design and establish the silvopastures and designed the windbreak with a nursery that specializes in native plantings. Loggy's Permaculture helped us create the initial concept for

the tree-crop silvopasture.

Regarding project execution, the silvopasture will be fully designed and implemented with the technical assistance of Trees for Graziers. They will help to source the right varieties of each tree, plant the trees, implement tree protection with tree tubes and electric fence, and provide technical support on pruning and maintenance of the trees in the first 5 years before they are mature enough to be unprotected from cattle. We have created a detailed windbreak design with Village Gardeners. They will source the trees and shrubs, plant the windbreak, and mulch the area. Prior to planting, Farm will prepare the entire 9.5-acre planting site by removing dilapidated paddock fencing. We will do this with our tractor and rigging and dispose of the treated wood at . We will create the berms and swales. Upon completion of the planting, Farm will maintain mulch around the new trees and shrubs for weed suppression, replace tree guards/stakes as necessary, weed whack, mow, and provide water until the plantings become established.

Once the windbreak and silvopastures are established and providing fodder, we will be able to evaluate how the project is meeting our objectives of providing nutritional feed, sun protection, wind protection, improving soil health, and mitigating water issues/increased capacity for holding water. We will evaluate how we have met these objectives through soil testing, tracking a yearly reduction in purchased animal feed, and monitoring the animals' comfort with regards to sun and wind exposure and monitoring the fields for saturation/pooling after rain events.

We plan to contact NCRS to see if there are any opportunities for cost-sharing the other expenses related to the startup of our pasture-raised beef operation. These related expenses include adding a perimeter fence and polywire paddocks and converting horse waterers to hydrants. We plan to apply for the Edwards Mother Earth Foundation Catalyzing Agroforestry Grant Program, a private grant providing \$1,000/acre for up to 12 acres and The Nature Conservancy Expanding Agroforestry Project Climate Smart Grant from the U.S. Department of Agriculture for up to \$1,500/acre. Otherwise, this project is self-funded.

In the meantime, we also consulted experts regarding how to manage our pastures prior to introducing animals and before the silvopastures are planted. We reached out to the Rodale Institute and spoke with them about our plans to add a pastured-beef operation to our property and inquired if they had recommendations on how to best prepare the fields for animals. Our practice at that time was for a local farmer to hay our fields. He would keep the hay and trade us grass-fed beef. Through our research, we became concerned that this arrangement, though appreciated, was moving nutrients off our land and utilizing diesel rather than moving us closer to our comprehensive land management goals. Under the advisement from the Rodale Institute, we are now bush hogging our fields 2 times a year and allowing the fields to rest and provide wildlife habitat while the organic matter in the soil improves and the nutrients and carbonaceous matter reabsorbs. This is our current strategy until we install the silvopasture which will minimize our need to bush hog and rely on fossil fuels as that function will be absorbed by grazing animals.

Not having a background in farming, just a firm interest in gardening and the natural world, there has been a steep learning curve. Along the way, we have relied on sage farmers, horticulturalists, permaculture designers, foresters, and agroforestry designers who are implementing similar practices and generously sharing their time and expertise with us to inform our comprehensive approach to land management and regenerative farming.

I would love to pay it forward and share my journey, lessons learned, or best practices with

members of the public or other groups who are interested in seeing agroforestry in action on a small scale and would be very open to working with MDA on this. We would gladly host a pasture walk for other farmers after establishment or be a resource in other ways.

Prior to becoming a full-time mom and farmer, I worked in public outreach—providing public programming, tours, and lectures. Conservation and community engagement are both passions of mine and I am happy to be a learning resource for others.

Additionally, Trees for Graziers would be interested in showcasing our silvopasture to other small farmers/homesteaders. We have also been approached by the 4-H with regards to starting a program for general farming for young children. While I did not feel like I was ready to help establish a new curriculum (prior to having hands on experience with these animals), this is another avenue I would be very interested in engaging in—introducing children to integrated systems of farm management and ecologically sensitive production methods may be something I could contribute in the future.

**Proposal**

1	<b>Planning</b>	20	<b>\$100.00</b>	<b>\$2,000.00</b>
2	<b>6' shelters 530+</b>	373	<b>\$10.00</b>	<b>\$3,730.00</b>
2	<b>4' shelters</b>	117	<b>\$4.00</b>	<b>\$468.00</b>
3	<b>Silvo Planting w/shelter 150-539</b>	836	<b>\$20.00</b>	<b>\$16,720.00</b>
4	<b>Tree Stock</b>	87	<b>\$7.00</b>	<b>\$609.00</b>
	Black Locust Seedlings			
4	<b>Tree Stock</b>	87	<b>\$30.00</b>	<b>\$2,610.00</b>
	Grafted Honeylocust			
4	<b>Tree Stock</b>	75	<b>\$15.00</b>	<b>\$1,125.00</b>
	Improved Mulberry, Persimmon, Hazel, Chestnut			
4	<b>Tree Stock</b>	100	<b>\$10.00</b>	<b>\$1,000.00</b>
	Hedgerow Shrubs			
4	<b>Tree Stock</b>	50	<b>\$15.00</b>	<b>\$750.00</b>
	Hedgerow Trees			
4	<b>Tree Stock</b>	91	<b>\$10.00</b>	<b>\$910.00</b>
	Riparian Shrubs			
6	<b>Spiral tree guards</b>	836	<b>\$0.60</b>	<b>\$501.60</b>
	the spiral guards will be cut up into 9" lengths, so the 1" diameter comes out to \$0.405 a piece. 3ft= \$3			
8	<b>Aftercare per tree/event (polywire)</b>	836	<b>\$2.00</b>	<b>\$1,672.00</b>
9	<b>Live stakes 3'</b>	346	<b>\$3.00</b>	<b>\$1,038.00</b>
	Willow			
10	<b>Polywire</b>	10552	<b>\$0.03</b>	<b>\$263.80</b>
	per foot			
12	<b>Flagging/Layout</b>	836	<b>\$2.25</b>	<b>\$1,881.00</b>
13	<b>Vole deterrent application</b>	836	<b>\$0.25</b>	<b>\$209.00</b>
14	<b>Mulch</b>	836	<b>\$5.00</b>	<b>\$4,180.00</b>
15	<b>Mulch Flat Rate Setup</b>	1	<b>\$300.00</b>	<b>\$300.00</b>

## Detail of Native Plant and Conifer Windbreak along Woodbine Road

Left of Entrance:

**Prevailing Winds**

\*The length of the windbreak will be filled in with native wildflowers and flowering ground-cover provided through splits and seeds collected from our existing wildflower meadows.



