From the Ground Up: Tree Planting Needs Local Roots

Large-scale tree-planting efforts have historically failed. Will we learn and plant a new path with agroforestry?

By Steve Gabriel

Tree planting has long occupied the imaginations and practices of cultures worldwide, especially as a solution to many issues that challenge us as civilization marches onward. As climate change awareness heightens, a passion for tree planting has been reignited, and more recently, it's been largely connected to farming, often under the umbrella of "agroforestry" - a practice of integrating trees with agricultural systems, rather than simply planting trees for conservation or ecological benefits alone.

In this renewed vision, there is a basic sentiment that tree planting is a good and noble task and that farmers can save humanity and the planet by planting fields with "profitable" trees that sequester carbon and make farmers money. A win-win scenario, right?

As idyllic an image as this is for an increasing number of governments, agencies, foundations, and even private investments, many challenges exist to overcome, and there is a real threat to the expectation that agroforestry plows ahead, making the same mistakes of the past. Those who have taken a hard look at past tree-planting initiatives note that they overwhelmingly fail with little learning or improvement the next time around.

A holistic approach to tree planting is needed to work across multiple intersecting elements, considering both the environmental and social aspects of tree planting that are specific and unique to a place. The process and the results should benefit, and not burden, farmers and their communities. A higher percentage of the funding available for planting projects should go directly to land stewards so they are fairly compensated for their efforts. Efforts to rapidly scale agroforestry should center on local organizing and decision-making to build long-term capacity.

Identifying the Challenges

At the outset, our Farming with Trees project sought to name the challenges inherent to agroforestry tree-planting efforts. The mistakes of the past are destined to be repeated unless we reflect critically and thoughtfully on how we can move forward on new paths.

At the heart of many of these issues lies the perpetuation of systemic models that fall back on capitalistic and extractive thinking. Particularly concerning is that many agroforestry plans center profits of yet-to-be-proven tree crop commodities, focus expertise and financial resources in the

hands of institutions and corporations, and emphasize individualism in the implementation of projects.

We seek to uplift community-based agrarian models where knowledge and expertise are centered on the farmers and community members, where decisions and access to funds are held collectively, and where profits come as a byproduct of local ecosystem restoration focused first on building biological and social forms of wealth. The difficulty in realizing this vision is multifaceted and includes the following factors:

1. Tree planting is not as simple as it seems

In the minds of many, tree planting is as simple as digging a hole, putting a tree in it, and covering the roots with soil. However, the nuances and details matter. Placement of the *right* tree in the *right* place in the landscape is key to reducing stress on the tree. Matching soil type and the microclimate to tree species is critical. The soil must be properly prepared for planting, and good-quality trees must be chosen. Attention is needed to plant the tree properly, and provisions to protect your trees from competing vegetation (via mulch), damage from animals (tubes, fencing), and inadequate water (if natural rainfall is in short supply) must be planned for before planting. The act of tree planting has become an industrial undertaking and needs relational and thoughtful approaches that honor the living being in each tree.

2. Funding for tree planting is woefully inadequate

Funding mechanisms for trees are wide-ranging, from governmental programs to private foundations. Across the board, they often underestimate the true cost of planting trees. Few funding mechanisms also cover additional materials needed for proper tree planting and protection and labor costs for site prep, planting, and maintenance. Total costs per tree for planting projects of at least a few hundred trees, including material and labor, are going to be $10 - $30 per tree. Funding also almost never accounts for the time and energy needed to maintain trees in their first 1 - 3 seasons - the most crucial period to ensure they survive and thrive long-term.

3. Scaling is hyper-focused on the number of trees planted
A common mistake of tree planting initiatives, including "world record" events like the Bonn Challenge, which set a goal of restoring some 860 million acres of forest globally by 2030, was the overemphasis on the number of trees planted out in the field. Agroforestry is buzzing with the notion of "scaling up," focusing on just getting as many trees into the ground as possible. These inflated numbers sound good on paper but don't reflect the long-term survival, health, and productivity of tree-based ecosystems, which may or may not be realized decades after trees are planted.

4. Funding mechanisms often couched in excessive bureaucracy and gatekeeping
Funding for farmers to plant trees is administered through two main channels: federal dollars typically go through USDA-NRCS (National Resource Conservation Service). At the same time, state-sponsored funds often flow through county Soil and Water districts. Both agencies are well known as understaffed, often not trained in trees or agroforestry, and county and regional agents of these entities often end up acting as isolated "gatekeepers" to funds, meaning that their relative expertise and interest in a given farm or project has a direct impact on determining if that farm ends up getting attention and support.

Larger grants and incentive programs often go to universities, state governments, and private corporate and non-profit organizations that pledge to support farmers. Unfortunately, the support is often nominal, routinely asking for farmers to participate as subjects without offering to pay them for their time and use of their farms for research or demonstration. Across the board, most of these funds end up in the indirect administrative budgets of institutions and their staff time, who are well paid, with very little flowing directly to farms, communities, and landscapes.

5. The type of trees promoted as "ready" for agroforestry primetime are not
In the US, the focus of agriculture is heavily skewed toward commodity farming, resulting in an overwhelming emphasis on agroforestry being focused on commodity "tree crops." In particular, hazelnuts and chestnuts are the focus of widespread recommended plantings. Yet, the genetic improvement of regionally adapted varieties that meet production and efficiency criteria for commodity farming is still only in the early stages of development.

While markets in Europe for hazelnuts, chestnuts, and other crops like black currants and elderberries give promising anecdotes for North American agroforestry, the same economic circumstances may not apply to the US. This isn't to say we shouldn't be planting thousands of tree crops in the landscape - we most certainly should - and we also must be honest about where they currently are: promising but uncertain. We should put more focus on planting test plots for further evaluation rather than plans that promote tree crops as if they are a market-ready solution.

The work of improving varieties and testing genetics is the work of this lifetime, but is often being plowed over in favor of narratives that rely on overly optimistic economic projections with many assumptions but little acknowledgment of the vulnerabilities and risks. There are many wonderful efforts to engage in research and development of these crops, but those efforts need time, trial and error, and for growers and researchers to figure out the kinks before scaling up plantings.

Additionally, as the tree crop infatuation rages on, dozens of agroforestry tree species that perform useful ecological and production functions on farming landscapes are being left out. These include examples such as willow, poplar, and black locust, which are all trees that work well in agroforestry systems by providing shade, shelter and fodder to livestock, reducing soil erosion, supporting water quality, and providing potential income streams for farms as nursery stock. Smaller, localized economics can find value in the obscurity these trees offer as viable commercial crops.

6. Tree planting on farms implies land ownership and tenure

Inherent in agroforestry is a central assumption that those who are able to participate need secure land access and tenure, which tends to limit access to those who own land. Given that today, private land ownership in the US is almost completely made up of white-identified people, this quickly becomes an issue of equity when considering the potential investment of millions of dollars into these landscapes if tree-planting projects are supported. It means that Black, immigrant, and Indigenous farmers are disproportionately excluded from agroforestry opportunities if the premise is land ownership.

History teaches us that vibrant agroforestry systems can and have long existed in common land access structures and cooperatives. (see the Dehesa and Montado systems in Spain and Portugal) Many mechanisms and strategies can help, such as land trusts, collective land ownership, long-term lease agreements, rematriation of lands, use of public lands, and so on. If the larger project of agroforestry is to succeed, these effects must be centered on agroforestry rather than mentioned as a side issue.

7. The availability of tree stock is low in both quantity and quality

Anyone seeking tree stock in the last five years is probably aware that there is clearly more demand than supply. The reality is that there is a significant shortage of tree nursery stock, and little is being done to address it as demand continues to soar. Of course, it's not just agroforesters interested in trees. In particular, dozens of cities

from Seattle to Palm Beach are starting to consider trees as an important climate mitigation and air quality improvement strategy.

The shortage in tree crops is not only an issue of quantity but also quality. A majority of the sourcing of seeds and plant materials by the nursery industry is narrow and has not been particularly concerned with bioregional adaptability. Most selections have been based on the value of ornamental, aesthetic, or timber over productive or adaptive trees for ecological ends. A recent assessment by the University of Vermont found that many regions in the US "had no locally adapted tree stock available."

Without the trees, agroforestry simply cannot grow.

Approaching Tree Planting Holistically

In order to begin addressing the complex issues laid out above, we must first temper our enthusiasm for agroforestry as a solution with critical thinking and reflection. In our thinking, success only comes if we prioritize and center these elements in our work:

Listening & Dialogue

In order to be effective in designing projects, we must first assemble and listen to the needs and concerns of farmers and land stewards. This might seem obvious, but rarely does it happen. Dialogue is ongoing, so the process must be flexible enough to support new information and understanding as it emerges.

Whole Ecosystem Planning

Humans need to engage with tree planting as a part of whole ecosystem restoration, considering the needs of soil, water, and other elements. Too many funded programs isolate elements and don't look at the intersecting factors at play. The goals of those stewarding the land, local markets, and community priorities help direct the design of tree-planting projects.

Flow of Funds

Certainly, a transformation of farm landscapes can be more quickly facilitated with increases in capital flowing to farms, but in what ways can this happen? First, a larger percentage of total funding should go directly to those stewarding the land, so less gets caught up institutionally. Access to funds should be relatively straightforward, not requiring mountains of paperwork or wading through systems with confusing language and procedures. Funds should be prioritized towards efforts to build long-term capacity to sustain tree planting versus one-off planting events.

Community Driven Decisions

Tree planting is a strategy that cannot look the same in two locales and is highly dependent on the local context of the community it's embedded in and the micro-context of each landscape where trees are to be planted. Rather than funding and supporting isolated individuals, agroforestry tree-planting projects could better leverage the power of communities and center decision-making within them. Local communities are also best suited to articulate what tree-based economies and products work best for them, rather than defaulting to commodity prospects that have so often hurt small farms globally.

Scaling Out, not Up
By focusing on the "end" of planting trees, we skip over the slow, foundational work where individual farmers and local communities develop relationships, buy-in, and commitment to tree planting and care for the long term. This work is intergenerational and needs to be orchestrated as such. Some communities might not be "field ready" for agroforestry yet. Building connections, knowledge networks, and local tree genetic banks has to be the starting point, and it might take years before large numbers of trees get planted out in the fields.

Community Tree Nurseries as the Starting Point

While it will take time to build the scaffolding necessary for actualizing an agroforestry transformation, we see a clear starting point, grounded in the wisdom of the natural landscape that surrounds each of us and inspired socially by seed-keeping movements that have emerged in communities around the globe. In his book *Trees of Power*, author and nursery owner Akiva Silver writes:

"Once you learn to identify trees, they will reveal themselves to you everywhere… I used to think that special trees worthy of being a named variety were extremely rare. I now think I could find some anywhere I lived in the world that has trees. Keep your eyes open, pay attention, learn to identify trees, and you will find treasures."

While the recent focus of agroforestry tree planting efforts has been toward scaling massive plantings over large amounts of acreage, we propose that the best way to invest in trees and in agroforestry is in numerous smaller, decentralized, autonomous community nurseries that are grounded in the knowledge and priorities of those in the community, and that focus on regionally appropriate tree species from an ecological, cultural, and production perspective.

Connecting regional nurseries can become the foundation of an exchange network of plant materials and genetics across bioregions. This approach begins to address the actual shortage of plant material appropriately and reduces barriers for people and communities to build their own tree-based wealth rapidly and in the manner they see fit. An acre field might hold a few hundred trees, and a few hundred square feet of a tree nursery can grow tens of thousands of trees relatively quickly.

This concept and approach do not need to be envisioned from scratch. For decades now, communities worldwide have been saving, selecting, and exchanging seeds and plants in the name of preserving fundamental rights in the face of ever-increasing corporate control of the seed supply. Despite the fact that these have mostly focused on annual vegetable and grain crops, structurally, there is much to learn. Seed keeping and exchange foster a sharing economy that promotes movement toward less private ownership and more toward the commons, which can, over time, extend to land access and tenure. Many seed-saving movements were also inspired by open-source software movements to push back against corporate monopolies of computer-based technology.

Most importantly, community tree nurseries start with the people embedded in a given place by engaging local tree knowledge keepers to crowd-source and find local tree materials of importance. These community members also assemble to determine the priority species the nursery should focus on based on their interests, needs, and cultural relevance. Over time, these spaces become centers of learning, knowledge exchange, and community wealth. Our next article will dive deeper into this concept as a roadmap for agroforestry to take root.

This article is Part 1 of a series to dive deeper into this topic and continue to explore the nuances of tree plantings on farms. We look forward to building a community through this project, slowly and with intention. We also have funding to help support these explorations in other communities around the Northeast. Learn more about the project and keep updated on new developments at www.FarmingWithTrees.org.

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