# Financing the Midwest Hazelnut Value Chain:

**Public grants, passionate individuals, and philanthropy pave the way to private investment**

December 2024

**Midwest Value Chain Case Studies for Continuous Living Cover Crops -** This case study, focused on developing value chains for Midwest Hazelnuts, is one of three in a series written by Green Lands Blue Waters, led by GLBW Research Project Specialist Evelyn Reilly, focused on building value chains for perennial and other continuous living cover crops. Find more background on CLC value chain work in the Midwest at the end of this case study and the full series here.

## Introduction

Hybrid hazelnut plantings at the Savanna Institute campus in Spring Green, Wisconsin. Photo: Evelyn Reilly

For several decades, farmers, breeders, university extension staff, nonprofit organizations, and entrepreneurs have been developing the Midwestern hybrid hazelnut, a novel tree crop that could provide environmental benefits, an option for farm diversification, and valuable food and fuel products. Work has included creating crosses of American and European hazelnuts, selecting well-performing varieties, assessing on-farm management strategies, designing and refining harvest and processing machinery and techniques, and conducting food science research, as well as communicating results and updates across the network. **The Midwest hazelnut value chain is at an exciting point. Bolstered by early adopter farmers, state grants, federal grants, university research programs, philanthropic funding, and deeply committed organizations and individuals who contribute time and expertise, it has grown from an idea to a nascent industry with a network of growers, a full processing line, and branded products.** This funding has helped address bottlenecks, and while several still exist, **the Midwest hazelnut industry is now poised to direct private impact investment to multiple areas during the next phase of growth**. Future investment in hazelnuts must be tailored to the needs of perennials; for example, farm financing timelines that match the delayed returns from establishing tree crops.

Here we share two examples highlighting how mixed funding was used to support the Midwest hazelnut value chain, first through the development of a shared use processing line and second through the American Hazelnut Company's development of products and a brand to boost sales and consumer awareness. These examples demonstrate how public and philanthropic funding advanced Midwest hybrid hazelnuts before private investment was widely available, making it possible to improve varieties, build basic infrastructure, and create products, thus providing proof of concept and positioning the industry for future private investment. This case study focuses on public funding, but philanthropic donors have been important as well. Information on public grants used to support hazelnut processing capacity development is provided in order to inform practitioners, but should not be considered a comprehensive list. To learn more about the Midwest Hazelnut industry, see the Appendix at the end of this document.

## Why Hybrid Hazelnuts?

**The Midwest agricultural landscape is in desperate need of diversification: to provide new economic opportunities to small farms, to offer cropping systems that are more resilient to predicted climate extremes, to provide a greater variety of ecosystem services, and to produce healthy food for people. Hybrid hazelnuts meet all these needs.**

- With continued improvement in breeding, agronomic knowledge, and mechanical harvesting, hybrid hazelnuts can offer a high-value crop production system. Current markets are primarily for human consumption, but could expand to supply protein meal for livestock feed and oil for biodiesel.
- As a tree crop, hazelnuts can tolerate drought, storms, and other extreme weather patterns better than most annual crops. Alley cropping with hazelnuts can also create microclimates that protect other high-value produce from wind and extreme heat.
- Hazelnuts are full of healthy fats, fiber, vitamins, minerals, and protein, and are popular for snacking or as an ingredient in other food products.
- Hazelnut plantings provide a wide variety of environmental benefits, including
- erosion control, decreased nutrient loss, habitat for birds and insects, and carbon sequestration. In fact, *the most rigorous research* indicates that perennial tree systems such as nut crops are some of the *only* agricultural systems that sequester carbon.

Shelled hybrid hazelnuts
Photo: Evelyn Reilly

## What are Hybrid Hazelnuts?

The American Hazelnut (*Corylus americana*) grows wild in the Midwest. While it is cold-hardy and disease resistant, the nuts are relatively small and the plants don't fit well into commercial operations. By crossing it with the European Hazelnut (*Corylus avellana*), which is widely used for commercial production in Oregon, Europe, and the Middle East, breeders have been able to produce hybrid hazelnut plants that combine the best of both. Efforts are still in progress, however, and a variety of needs remain to move the nascent Midwest Hazelnut industry forward. This case study provides an overview of the Midwest hazelnut value chain, highlights successes, and discusses how current needs are being met by a combination of public and private investment, philanthropy, and in-kind contributions.

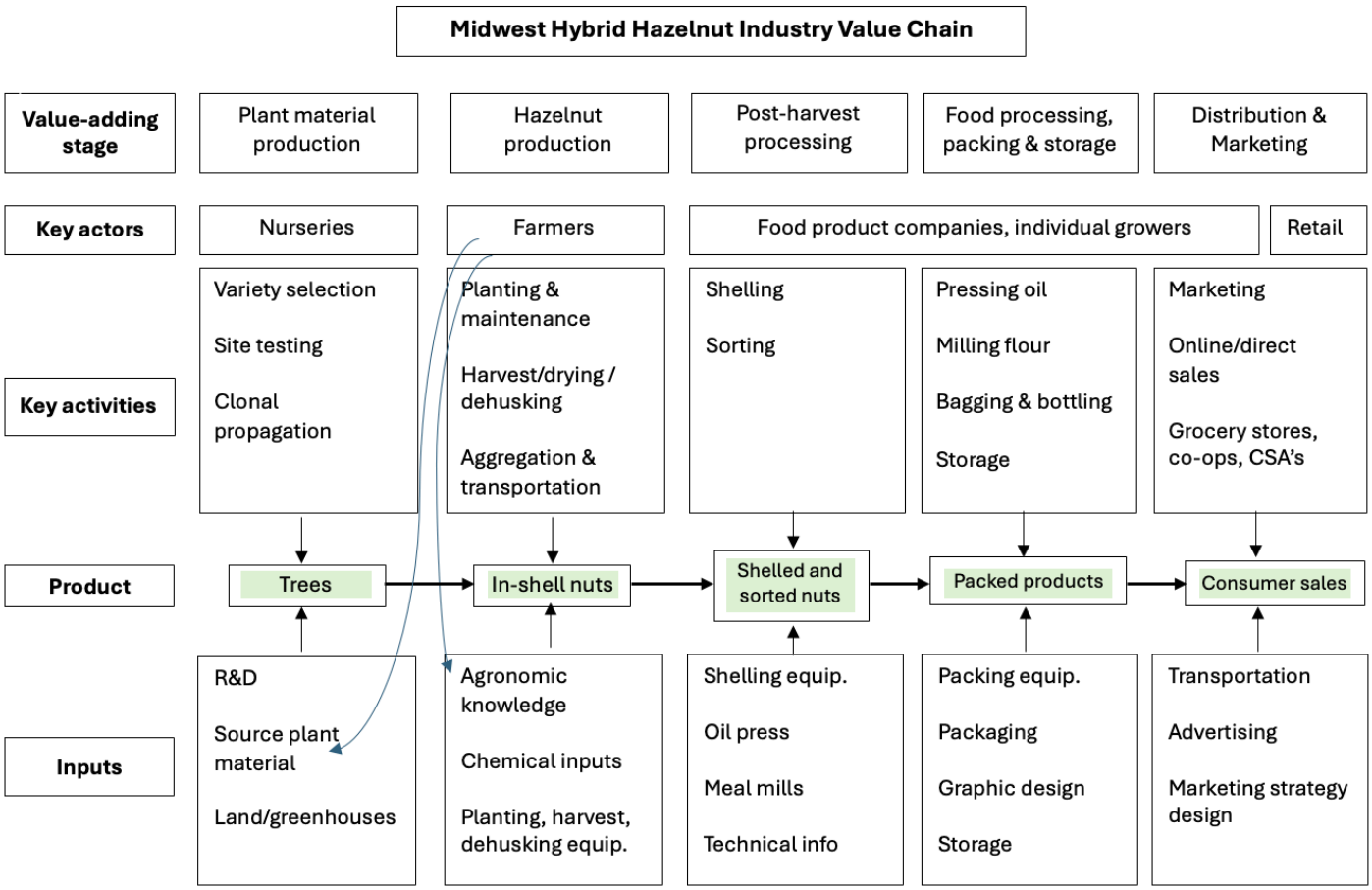
## The Midwest Hazelnut Value Chain Overview

*Quality plant material and on-farm production* - The basic input to the Midwest hazelnut value chain, and a current bottleneck in the industry, is hybrid hazelnut plant material for on-farm planting. Seedlings are widely available and are necessary as a pollen source, but are highly variable in terms of harvest. Clonal material offers the best genetics and is essential for efficient production. However, hazelnuts do not graft and are difficult to clone. See the case study on Minnesota's Developing Markets for CLC Crops Program for an example of propagation efforts. As supply allows, seedling and clonal plants are established on Midwest farms. Production activities include planting, maintenance, harvest, dehusking, and transportation. Inputs to this stage include plant material in the form of seedlings or micropropagated clones, chemical inputs, planting and harvesting equipment, and agronomic knowledge, which is also produced by growers and shared via grower and extension networks. See diagram below for a visual overview.

High-quality hazelnut plant material in a greenhouse. Photo: Evelyn Reilly

Just-picked hazelnuts, still in green husks.
Photo: Evelyn Reilly

*Harvest and processing* - Harvest is typically possible after 3-5 years. Efforts are underway to design a mechanical harvester to efficiently harvest the nuts directly from the trees, which is critical for economically viable commercial-scale plantings. After harvest, nuts remain in husks, which must be removed. Dehusking remains a challenging step, since it is a unique need associated with hybrid hazelnuts. European hazelnuts, in contrast, drop out of their husks when mature. Many Midwest hazelnut growers send dehusked hazelnuts to Ashland, Wisconsin, where they are sterilized, cracked, and separated from the shells. At that point, different growers or companies may carry out additional processing steps, such as roasting, pressing for oil, or flavoring, before packaging for sale to consumers.




*This diagram provides a general overview of the Midwest hybrid hazelnut value chain. Beginning with plant material production to provide the hybrid hazelnut trees themselves, a variety of actors engage in value chain activities to produce in-shell nuts, shelled and sorted nuts, and value-added snacks and baking products.*

## Example 1: How mixed funding created shared processing assets to support industry expansion: The Ashland Hazelnut Processing Facility

In the early days of the Midwest hazelnut industry, cracking was done in a small cracker machine powered with a hand drill, and shells were sorted out by hand - a slow and extremely labor intensive process. There was an obvious need for improved shelling and sorting. In 2018, American Hazelnut Company began a public-private partnership with University of Wisconsin Extension (specifically working with UW-Extension Woody Crops Specialist Jason Fischbach) to establish a hazelnut processing facility, housed at Northland College's Larson Food Lab in Ashland, Wisconsin. The processing line has been key in facilitating processing of Midwest hazelnuts for research and commercial purposes. By improving efficiency of the shelling and sorting process and reducing the per-pound cost of hazelnut processing from $4.50 to less than 70¢/lb it has directly increased the profitability of the industry. The Ashland processing line exemplifies effective use of grant funding and in-kind contributions to reduce the time and labor needed to shell and sort nuts. Multiple funding sources were combined to acquire the necessary equipment to sort in-shell hazelnuts by size, crack the shells, and separate the whole kernels from shells and split kernels. Key equipment includes:

- Badger Drum-Sizer for size sorting unshelled nuts
- Borrell Sample Cracker to crack the shells (below left)
- Badger Aspirator for the initial separation step
- DSR-1260 Drum-Sizer to separate shell fragments, kernels, and uncracked nuts (below center)
- Badger Tilt Belt Sorter to separate kernels, split kernels, and shell fragments (below right)
- Sortdek N1 Color Sorter to separate remaining shell fragments and recover split kernels

Photos: Emma Dempsey

Equipment is owned primarily by UW Extension; some is owned by American Hazelnut Company (a partnership-based business organized as an LLC and owned by grower-members who hold "membership units") and some by individuals. Significant volunteer contributions in the form of labor and equipment development have also been key to establishing this processing line, including designing machines to meet the unique needs of Midwest hazelnuts, which are smaller than the more widely grown European hazelnuts. For example, Dr. David Bohnhoff, professor emeritus of Biological Systems Engineering at University of Wisconsin Madison, designed and built some of the equipment that is now in use at the facility. Some of his labor is compensated through projects paid for by UW Extension or ownership units in American Hazelnut Company, but much of his work on designing and refining equipment is done on his own time, driven solely by his passion for hazelnuts.

Hybrid hazelnuts ready for processing at the Ashland facility. Photo: Emma Dempsey

Users of the processing facility currently include American Hazelnut Company, Regenerative Agriculture Alliance's TreeRange brand, researchers, and individual growers who process their hazelnuts themselves. Growers and companies pay a fee to use the equipment, but labor is also subsidized by UW Extension staff running the processing line and grant funding for labor. American Hazelnut Company also offers ownership units (shares) in exchange for in-kind contributions and services, including using the equipment owned by individuals, transporting nuts, purchasing or building equipment, or providing hazelnuts. The facility is currently operating well below capacity; greater supply from current and new growers would further reduce the per-pound overhead costs. With the increase in growers in Southern Wisconsin, relocating the processing line or creating local aggregation hubs could reduce costs by reducing transportation distances. Collaborative efforts are underway to establish collection points for dehusking and transportation to Ashland by UW Extension, the Savanna Institute, and American Hazelnut Company.

### *Selected Funding Sources for Ashland Processing Line Equipment and Labor*

- American Hazelnut Company owns the aspirator, which was purchased with capital raised by sales of units in the company
- Dr. Dave Bohnhoff designed, built, and owns the Badger Drum-Sizer and a tilt-bed sorter
- Another private individual owns the color sorter (a $35,000 machine) and the Borrell Cracker
- UW Extension owns the other pieces of equipment.
    - A 2019 Specialty Crop Research Initiative (SCRI) grant, "Overcoming the Obstacles to Hazelnut Production in the Upper Midwest," applied for by UW Extension and the Savanna Institute, with matching funds from The Jeremy and Hannelore Grantham Environmental Trust, supported equipment purchase as well as planting and other hazelnut activities. SCRI grant funding is also being used towards developing regional grower hubs, which would facilitate equipment and information sharing.
    - A $79,800, 2022 Targeted Industry Project (TIP) Grant from the Wisconsin Economic Development Council (WEDC) provided funds for equipment, consulting, personnel and leasing costs.

Funneling hazelnuts into the drum sorter at the Ashland processing line. Photo: Emma Dempsey

- UW Extension staff carry out some of the processing work, effectively subsidizing costs. Grant funds have also subsidized labor costs. Other costs are covered by the fees for use of the equipment.
    - American Hazelnut Company with support of UW Extension applied for and received a 2023-2024 Buy Local Buy Wisconsin grant, including $8,000 to subsidize labor. This facilitated hiring two people for processing work one to two days per week.

## Example 2: How American Hazelnut Company is building a brand for Midwest hybrid hazelnuts

After shelling and sorting, hazelnuts go on to other processing and marketing steps. **American Hazelnut Company has creatively pulled together various sources of financing for equipment, labor, marketing, and other needs in order to develop, produce, and market hazelnut products. This work is paying off, with the company predicting a nearly ten-fold increase in returns between 2018 and 2024**, and selling out of hazelnuts every year - sales grew 50% from 2020 to 2021, and over 100% from 2021 to 2022. See the table below for examples of grant and investment funding that has contributed to this process.

American Hazelnut Company was founded in 2014 to provide "the means for Members to grow, process, and sell products made with hazelnuts grown in the Upper Midwest. The Members of the Company work to realize the shared vision of an agricultural system consisting of diverse family farms with growers controlling the value-chain to earn a fair economic return for their efforts." A member-owned model provides operating funds and helps achieve the goal of maintaining grower control of the company. Farmers and other investors can buy "units" - essentially shares - that allow them a voice and eventually financial returns. This capital funded the basic operation of the company in the early years of its founding. It now has 35 grower-members.

American Hazelnut Company initially occupied a commercial kitchen space in Gays Mills, Wisconsin and developed a range of hazelnut products including plain lightly roasted hazelnuts, oil, flour, and flavored hazelnut Snackers, which were developed through a Buy Local, Buy Wisconsin grant. Recently, they relocated to a new commercial kitchen space in the Food Enterprise Center in Viroqua, Wisconsin. The center, a project of the Vernon Economic Development Association, is a regional food hub that acts as an aggregation, processing, storage, and distribution center, housing over two dozen small food businesses. The Center's Executive Director secured a grant from a local ag lender to purchase equipment that then was made available for the company's use. A benefit of the move has been higher storage capacity, both dry and refrigerated, which is key for the growing company. After shelling and sorting at the Ashland processing facility, hazelnuts are transported to Viroqua, where they are roasted, seasoned, pressed into oil, milled into flour, and packaged before distribution to wholesale accounts, ingredient customers, and direct to consumer sales, primarily online.

Photo: Studio Moyna

Photo: Studio Moyna

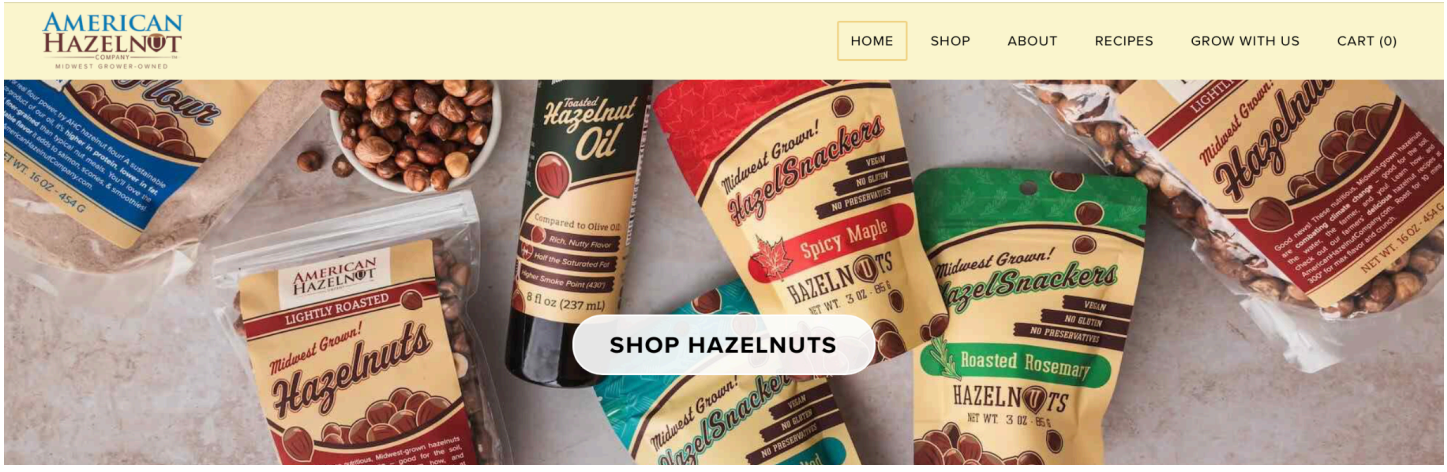
State, local, and federal grants have helped improve the efficiency of several food processing steps, especially milling the hazelnut meal leftover from the oil pressing. Pressing hazelnut oil creates a high-protein cake that can be used as flour, but it must first be milled into a usable powder. Initially, American Hazelnut Company had a three-step process, including using a dough mixer to break up the press cake into smaller pieces, then a hand drill-driven hopper to break it down further, and finally a flour mill to produce the hazelnut flour. With a combination of Agricultural Utilization Research Institute (AURI) technical assistance and funding from a three-year, $365,000, 2022 Local Food Promotion Program (LFPP) grant secured by Jason Fischbach, American Hazelnut Company purchased a pellet mill for $7,000. Now, in one step, they

can run several lots of the press cake through the mill, producing an even finer flour than before in a fraction of the time. Not only does this ensure that the by-product of oil production also becomes a valuable product, it significantly reduces the labor involved and thus drives down the cost of production.

A 2020 Buy Local Buy Wisconsin grant provided key funding for value-added product development and packaging. This grant supported the development of Hazel Snackers, roasted and seasoned hazelnuts in convenient snack-size packaging. American Hazelnut Company became a sub-awardee on the grant (originally secured by Jason Fischbach), allowing them to work with chefs to develop and test recipes. This was also in effect subsidized by many hours of labor that two board members contributed in recipe testing and development in exchange for ownership units in the company, allowing the company to avoid additional cash outlay. The grant also helped fund the product packaging design and the initial packaging purchase. Custom packaging is expensive yet essential for creating a recognizable brand and increasing consumer awareness.

Grant funding has also supported key marketing activities. A 2022, Local Foods Production Program *Increasing The Production, Processing, and Sale of Locally-Grown Hazelnuts in the Upper Midwest,* is helping assess consumer views and develop marketing and branding tools for Midwest hazelnuts. Outputs include a report on Midwest hazelnut branding and marketing recommendations and a Midwest consumer survey. The near full-time sales and marketing position at American Hazelnut Company is supported by grant funding, including from the same 2022 LFPP grant that purchased the pellet mill and a federal Specialty Crop Block Grant, which will provide two years (2025-2026) of 80% time salary. The marketing position has facilitated significantly higher sales: American Hazelnut Company expects to see a 60% increase in revenue from 2023 to 2024.

American Hazelnut Company is the currently the only entity directing significant resources to marketing Midwest hybrid hazelnuts. These activities support market growth and increased sales, which provides a revenue stream for ongoing development of the company. **However, by building a stable brand presence in the region, American Hazelnut Company is raising awareness and generating insights that will contribute to the success of the industry as a whole. They also play a key role in demonstrating consumer demand, so that potential growers can see that there is a market for hybrid hazelnuts.**




*This case study is part of a series of three case studies on developments in Continuous Living Cover value chains in the Midwest. For more context on the development of these case studies, please see the context and key takeaways section following the appendices. Many thanks to Dave Bohnhoff, David Bruce, Colin Cureton, Emma Dempsey, Steffen Mirsky, Pam Saunders, Greg Schweser, and Steve Unverzagt for their invaluable contributions to this project.*

# Appendix: Sources of Support for the Midwest Hybrid Hazelnut Industry

## A: Selected Funding Sources for American Hazelnut Company

| This table highlights some funding sources, primarily state and federal grants, that American Hazelnut Company has used to purchase equipment and packaging and to pay for marketing and marketer salary. | |
|---|---|
| *Need* | *Funding source* |
| General capital | Farmers and other investors buy "units" in company, providing investment capital and maintaining grower control in the company, 2014 - present |
| Value-added product development and packaging | $49,300, 2020 Buy Local Buy Wisconsin grant from the Wisconsin Department of Agriculture, Trade and Consumer Protection, awarded to the Northland College Hulings Rice Food Center, allowing them to expand their work with American Hazelnut Company. This allowed the company to develop three flavors of Hazelnut Snackers, a value-added hazelnut product as well as manufacturing protocols, branding and packaging recommendations. |
| New kitchen equipment | In 2024, Vernon Economic Development Association director Sue Noble secured a grant from an ag lender to cover the costs of new kitchen equipment for American Hazelnut Company including racks, pans, shelving, and tables. Kitchen equipment was previously shared in the Gays Mills commercial kitchen space. |
| Equipment and product development | A $365,000, 2022 Local Food Promotion Program (LFPP) grant and assistance from the Agricultural Utilization Research Institute (AURI) helped purchase a $7000 pellet mill to speed up the process of grinding hazelnut flour, as well as a semi-automatic labeler, automatic bag filler, and moisture tester. It also provided funds for recipe and package development for the next value-added product, a hazelnut snack mix. |
| Market research | A 2022 LFPP grant supported American Hazelnut Company in working with Overstory for market research on consumer views and developing hazelnut market insights, branding, and labels. |
| Marketer salary | A 2022 LFPP contributed salary for American Hazelnut Company's marketer. This was also supported by funds made available by Connie Carlson in her role as 2022-2023 Endowed Chair of Agricultural Systems at the Minnesota Institute for Sustainable Agriculture; her work included increasing consumer awareness and demand for Midwest hazelnut products through a consumer "champion" program. |
| Processing and packaging; salary | A 2023 Buy Local Buy Wisconsin provided funds to enhance processing, update product labels to improve brand integrity and recognition, diversify product lines, and cover production salary. |
| Sales and marketing | A federal Specialty Crop Block Grant will provide two years (2025-2026) of 80% time salary for the Sales and Marketing position. |

## B: Key Types of Support

- **Philanthropic Funding** - Philanthropic funding contributes to hybrid hazelnut industry development through, for example, donations to NGO's working on hybrid hazelnut production system agronomics and adoption. Limited information is available about this funding, but it plays an important role by supporting long-term projects and public goods that do not have excludable returns.
- **Public Funding** - Both state and federal grants and research funding via public universities has been central and critical to advancing the Midwest hybrid hazelnut industry to its present state. This has included basic research such as breeding and plant propagation as well as funds for marketing and key infrastructure such as processing

equipment. Ongoing public investment is still needed for breeding, plant micropropagation protocols, and agronomics, as occurs for major commodity crops like corn and soy, consistent with the mission of Land Grant Universities. Public funding for on-farm adoption and commercialization will also remain important to ensuring that economically viable pathways are available to turn the crop into consumer products.

- **In-kind Contributions from Individuals** - The involvement of highly-motivated, knowledgeable, unpaid or minimally compensated individuals including farmers and retired researchers has been critical to advancing the hazelnut industry. Even when individuals are paid as staff at Midwest ag organizations or public institutions, their unique knowledge and personal passion acts as a driving force and they go above and beyond their job requirements in finding ways to support hybrid hazelnut development.
- **Private Investment** - To date, private investment has been largely unavailable for breeding work, agronomic research, early processing infrastructure, farm financing, and other needs. But now there are established assets that provide opportunities for private investment, in areas such as plant propagation, perennial farm financing, and ongoing brand and product development. New entities such as Midwest Hazelnuts, LLC aim to integrate and coordinate different parts of the hybrid hazelnut value chain to support industry development and private investment.

## C: Grant Programs Mentioned

Specialty Crop Research Initiative: The SCRI program is administered by the USDA National Institute of Food and Agriculture and provides grants for research and extension work that addresses critical needs in specialty crop development.

Resilient Food Systems Infrastructure: The goal of the RFSI program is to build resilience in the middle of the food supply chain, increase markets and market access for small farms and food businesses, and support development of value-added products. The RFSI program also supports fair prices and wages and new, safe, job opportunities. States and territories work in partnership with the USDA to make competitive subawards.

Local Food Promotion Program: The Local Food Promotion Program (LFPP) promotes intermediary supply chain activities such as processing, aggregation, distribution, and storage of local and regional food products. LFPP offers four types of projects, 24-month Planning, 36-month Implementation, 24-month Turnkey Marketing and Promotion, and 24-month Turnkey Recruitment and Training, in amounts ranging from $25,000 to $500,000.

Buy Local Buy Wisconsin: Since its inception in 2008, Buy Local, Buy Wisconsin grants have provided more than $2.8 million for 112 projects. Grant recipients have generated more than $13.9 million in new local food sales, created and retained more than 406 jobs, and benefited more than 4,800 producers and 4,972 markets.

## D: Additional Information

- Developing Markets for CLC Crops grant program - Minnesota Department of Agriculture
- Hazelnut Crop Profile - Savanna Institute
- Developing a Hazelnut Industry in the Upper Midwest - Amanda Sames, University of Minnesota
- Prospects and Bottlenecks in the Midwest Hazelnut Industry - Savanna Institute
- Upper Midwest Hazelnut Development Initiative
- UMHDI Strategic Plan 2018-2027 - Upper Midwest Hazelnut Development Initiative

# Continuous Living Cover Value Chain Case Studies: Context and Key Takeaways

## Why Continuous Living Cover Value Chains?

Continuous Living Cover (CLC) cropping systems maintain living roots in the ground year-round while keeping the soil covered. Green Lands Blue Waters identifies five strategies to implement CLC on the landscape: agroforestry (integrating trees and shrubs into farming systems), CLC with annuals (cover crops, winter oil seeds, and small grains), perennial grains (e.g. Kernza), perennial biomass (e.g. switchgrass, *Miscanthus*, and other bioenergy crops), and perennial forage and grazing (well-managed rotational grazing, silvopasture, and perennial forage crops such as alfalfa and grasses). CLC systems offer a range of environmental benefits - improved soil structure and organic matter content, reduced erosion and nutrient losses to ground and surface water, and habitat for birds and pollinators. They also offer economic, social, and nutritional benefits to farmers, rural communities, and consumers. CLC value chain coordination is critical to actualizing these benefits on working lands by bringing CLC products to market.

The term 'value chain' was coined in 1985 by Michael Porter to describe how businesses add consumer value to a product along the supply chain. Some agriculture and food system practitioners in the Midwest also use it as shorthand for *values-based supply chain*: one that delivers food, feed, fiber, and fuel in ways that align with the values of and bring value to producers, processors, consumers, and other stakeholders. For example, they may prioritize cropping systems that deliver soil and water quality benefits, humane treatment of livestock, and fair pay for farm and food system workers.

One of the most important levers for increasing CLC crop acreage across the Upper Midwest landscape is markets, but between farm field and consumer sits a complex web of processing, storage, aggregation, distribution, wholesale purchasing, marketing, and other value chain coordination activities. A network of organizations and individuals is working to create functional values-based supply chains for CLC crops by centering farmer economic viability, community wealth building, and business opportunities, while elevating the importance of relationships, integrity, transparency, and social and environmental impacts.

## CLC Value Chain Case Study Project Rationale

These case studies are informed by years of collaborative work across the Upper Midwest. As a recent example, the Artisan Grain Collaborative hosted a retreat in 2022 to connect CLC value chain practitioners, build awareness of each others' work, and develop shared language and messaging around the definition of 'value chains' and the *values* we are working towards (see infographic below). In 2023, Green Lands Blue Waters hosted a multi-day CLC value chain workshop in Madison, Wisconsin. In 2024, the Wallace Center led discussions on value chains through a Regional Food System Planning grant. In addition, these organizations, partners, and supporters across the Midwest continue to do daily work on value chain coordination.

Innovation in supportive policy, market development, and financing is ongoing. These case studies are a snapshot in time, which we hope can inform, inspire, and help build next steps. In creating these case studies we looked for successes, particularly with diverse capital stacks and private equity or impact investment. However, we heard a recurring story of how private investment is not yet accessible in this space, while public grants, philanthropy, and dedicated individuals are driving technology advancement and business growth. Midwest CLC value chain practitioners have been smart and resourceful with the assets they do have, and as a result, there are now opportunities for early

private investment. We hope to highlight those opportunities in these case studies and drive further investment in the sector in ways that benefit businesses, consumers, rural communities, and the environment.

## Key takeaway: Continuous Living Cover agriculture and value chains need ongoing public and philanthropic investment as a bridge to private investment

Continuous Living Cover cropping systems require public and philanthropic investment to reach the point of attracting private investment. These case studies describe how value chain actors used creative combinations of federal and state grants and philanthropic sources to finance values-based CLC supply chains, with additional support from ag lenders, private equity, local economic development funds, and individual in-kind donations of time, resources, and expertise. So as not to portray CLC crops as inherently economically risky compared to conventional crops, it is important to emphasize the broader contextual reasons for why public and philanthropic support is critical as a bridge to private investment in CLC value chains:

- Conventional row crop agriculture is highly incentivized and subsidized through publicly-funded research, supportive policy, and risk mitigation via cost-share programs and crop insurance, as well as established infrastructure and readily available markets that are intentionally designed to absorb crop surpluses. Conventional crops did not come to dominate the landscape solely through market forces and private investment; CLC crops and systems are also unlikely to overcome initial barriers and expand significantly solely through market forces and private investment.
- Public and philanthropic funding are often designed to incentivize, support, or reward the provision of public goods such as improved human and ecosystem health, which accrue broadly to many people over time, rather than rapidly to individual investors. Many of the key benefits of CLC systems are either public goods or avoided negative externalities for which the market does not, by definition, take responsibility. Thus, these systems may be excellent investments from a public standpoint, even before they can offer short-term capturable returns.
- Public investment can help develop CLC enterprises to the point that traditional investment can step in, at which point they can provide both profits and broader benefits. For example, a key factor for many crops is production scale-up to achieve the volumes necessary for efficiencies of scale, which facilitates increased profitability. However, it takes time to reach this point, during which crops need other forms of support.
- Investment that tolerates long-term return on investment is essential for the development of novel CLC systems. For example, research on new crop species, production scale-up, and market development efforts can take decades, but can ultimately benefit millions of people. This work is valuable, but not necessarily attractive to private investors due to the long time frame.
- Public and philanthropic funding can complement private investment. For example, an explicitly stated goal of the $60 million Expanding Agroforestry Project (EAP) is to catalyze private investment in agroforestry and "further develop and leverage new private financing options developed for agroforestry operations." The EAP is funded by the USDA Partnership for Climate-Smart Commodities program and is led by the Nature Conservancy in partnership with regional lead organizations (including the Savanna Institute for the Upper Midwest). Goals include greater adoption of agroforestry systems by providing incentive payments to farmers, increasing agroforestry staff capacity, and expanding markets for climate-smart agroforestry products.

# MIDWEST VALUE CHAIN COORDINATION:
## STRENGTHENING FOOD SYSTEMS THROUGH SHARED VALUES
and some examples of those values in action

### COMMUNICATING CLEARLY AND HONESTLY ABOUT OPPORTUNITITES AND BARRIERS

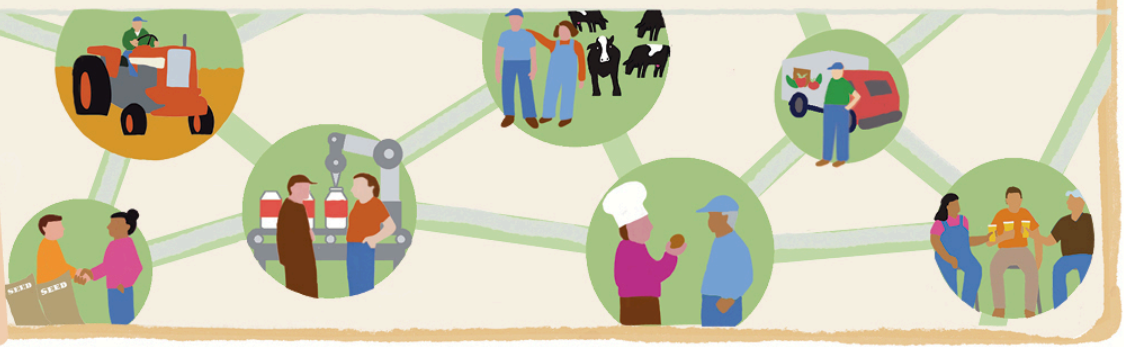
To illustrate this, **Savanna Institute's** work includes communicating honestly with stakeholders about the benefits & challenges of agroforestry. Their resources include info on cost, yield, and profits of twelve key tree crops.

### FINDING PRACTICAL PATHS TO ECONOMIC VIABILITY, OWNERSHIP, & WEALTH CREATION

Putting this value into practice, the **Forever Green Initiative** is developing and improving winter-hardy annual and perennial crops and cropping systems that protect soil and water while driving new opportunities for growers, industry and Minnesota communities.

### FOCUSING ON REGIONAL COMMUNITY-LED NETWORKS THAT ARE MAKING GOODS THAT SUPPORT HEALTH, STEWARD NATURAL RESOURCES, AND HAVE OTHER POSITIVE IMPACTS

As one example, the **Wallace Center** supports diverse value chain actors and professionals to connect, learn, and pursue common goals. This includes providing curriclum-based trainings, conducting value chain analyses, facilitating collaborations, and offering evaluation frameworks



### DECENTRALIZING POWER AND DEMOCRATIZING DECISIONS

An example of this value in action: **Grassland 2.0** is engaging communities through Learning Hubs to assess the current landscape of livestock farming and decide together about strategies to move towards a better future.

Demonstrating these values, **Green Lands Blue Waters** connects, collaborates, convenes, and communicates so partners can work jointly on continuous living cover projects they can't tackle alone.

### BUILDING JUST, FUNCTIONAL, AND MUTUALLY BENEFICIAL RELATIONSHIPS THAT ADAPT TO CHANGE

Case in point, the **Artisan Grain Collaborative** is built on deep connections across the grain chain. As the pandemic began, this network was immediately able to launch an effort to distribute thousands of locally grown, milled, and baked loaves to neighbors in need.

This list of shared values was developed jointly by a group of peer organizations building value chains for small grains, perennials and other crops that provide continuous living cover on the farm landscape: Artisan Grain Collaborative, University of Minnesota Forever Green Initiative, Grassland 2.0, Green Lands Blue Waters, Savanna Institute, and Wallace Center at Winrock International. It shows the shared vision of what we are collectively working toward with an aim for greater connectivity across and impact in value chain coordination work at the landscape-scale in the Upper Midwest.