

Growing farm to school supply chains with local vegetable blends

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Increasing access to fruits and vegetables in schools is one way to address nutritional and diet-related health concerns among children. The 2010 federal Healthy, Hunger-Free Kids Act requires that school lunch programs significantly increase students' access to fresh fruits and vegetables. Farmers are interested in working together to supply school districts with the fresh produce they need to fulfill these new requirements, while creating new markets for their products. Wisconsin schools involved in the National School Lunch Program feed approximately half a million children daily, according to 2013 data from the Wisconsin Department of Public Instruction.

Schools can meet new nutrition requirements while supporting local farms and businesses by sourcing a variety of foods locally. Farm to school efforts across Wisconsin have successfully linked schools and farms for this purpose. When purchasing directly from farmers, however, schools face challenges related to distribution, pricing, coordination and product consistency. In a 2013 survey, 77 percent of Wisconsin school food service directors not currently purchasing local produce said that they would prefer to purchase local foods through either a produce distributor or their prime vendor.

Building on the success of a root vegetable blend developed for the Milwaukee Public Schools, UW-Madison CIAS researchers Sara Tedeschi and Lani Skipper, along with faculty adviser Alfonso Morales of the Department of Urban and Regional Planning, explored options for supplying schools across Wisconsin with a reliable volume of locally grown, ready-to-roast vegetables. During the early stages of this project Tedeschi stated, "Partners across supply sectors have really come to the table to ensure that the future of school food includes local and minimally processed healthful products for students. We expect to encounter challenges, but we also expect that from producers to processors to distributors to schools, all involved are committed to long-term success." The resulting Wisconsin Harvest Medley project provided easy access to minimally processed root vegetable blends for schools (and other institutions) across the state through existing distribution channels. The project focused on the 2013 growing season and the 2013-14 school year.

Tedeschi and Skipper compared supply chains, including traditional and innovative models, for processing and distributing the locally sourced, pre-cut and frozen blends. Building relationships between supply chain partners was a key part of the project, regardless of the supply chain model. For the sake of this project, partners included several producer groups, processors, food hubs, distributors and institutional buyers. The researchers found that the sourcing, processing and distribution models used to create the *Wisconsin Harvest Medley* and other similar vegetable blends have the potential to increase farmers' access to large, stable institutional markets while helping schools meet the new nutritional guidelines.



Serving up a vegetable blend in an Onalaska school

The Wisconsin Harvest Medley project provided easy access to minimally processed root vegetable blends for schools and other institutions across the state.

The Wisconsin Harvest Medley Project was funded by a 2012 USDA Specialty Crop Block Grant and involved significant coordination with partners across food industry sectors. The project also engaged advisers from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), School Food FOCUS and CIAS. DATCP provided integration with the Wisconsin Farm to School Program, as well as technical assistance through the Wisconsin Buy Local, Buy Wisconsin Program. The School Food FOCUS provided support throughout the project and was a key conduit to the original prototype for the fresh Harvest Medley blend. That first blend was developed by the St. Paul, Minnesota Public School District as part of the first School Food FOCUS Learning Lab and picked up and further developed by the Milwaukee Public Schools and supply chain partners.

Supply chains

Tedeschi and Skipper collaborated with project partners to develop three different ways of moving the Harvest Medley blends from farms to schools: a conventional supply chain, an online broker working with conventional supply chain partners, and a multi-stakeholder cooperative.

The researchers used the term “conventional supply chain” to describe long-standing purchasing relationships between national food industry entities largely dependent on awarded contracts between buyers and sellers. The conventional supply chain was used to develop and supply the *Wisconsin Harvest Medley*—a fresh cut blend of carrots, parsnips and sweet potatoes. Public school districts that purchased the Harvest Medley included Madison and Milwaukee, as well as many smaller districts. This supply chain defined “local” as grown within Wisconsin.

Schools in the Cooperative Educational Service Agency (CESA) 2, representing 74 school districts that purchase supplies and food together, ordered the blends with the assistance of an online broker, FarmLogix. (CESA Purchasing is the new statewide purchasing program of CESA 2.) The FarmLogix supply chain was similar in structure to the conventional supply chain, but was unique in how it was coordinated. FarmLogix provided farm-to-plate technology connecting local farms to institutions through existing processors and distributors. This broker was accountable for the local product and provided transparency through customized reporting. A strong dedication to sourcing local product and building a values-based supply chain is part of their mission. In addition to creating their own version of the *Wisconsin Harvest Medley* blend, FarmLogix created a *Holiday Medley* blend that included carrots, sweet potatoes and butternut squash.

“FarmLogix works with the customer to define local,” said Linda Mallers, FarmLogix Founder. “When product that meets the definition of local for our customer is not available, we will seek product from our region. And in so doing, we source identify.”

A number of institutions, including schools, restaurants and hospitals, purchased similar frozen vegetable blends through Fifth Season Cooperative, which is co-owned by growers, food processors, distributors and workers in the Driftless Region of southwestern Wisconsin. The Fifth Season’s mission is to work with and develop existing food system infrastructure within a 150 mile radius of Viroqua, Wisconsin.

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The Fifth Season used the project opportunity to explore minimally processed, value added products and developed two frozen, diced vegetable blends for the 2013-14 school year. The *Wisconsin Potato Fusion* blend consisted of three, skin-on potato varieties from Coloma Farms in Coloma, Wisconsin. The *Winter Moon* blend contained carrots, butternut squash, gold potatoes, and red and golden beets largely sourced through member producer group OrganicValley/CROPP Cooperative. These frozen blends were regionally identified and trademarked by the co-op.

The trend in spin-off blends during the first year of the project was the early hallmark of a successful outcome, namely the perpetuation and growth in the private sector of locally sourced, minimally processed produce for Wisconsin institutions.

See the graphic on page 4 depicting the partnerships in these three supply chains.

Challenges

The Harvest Medley project showed potential for expanding the market for local food by “scaling up” farm to school through strategic supply chain partnerships. For schools, scaling up increases their access to local products by providing the product aggregation, processing and distribution they require to maintain efficiency. For farmers, scaling up can also mean broadening market opportunities to include small and medium size farms, via the work of food hubs and other aggregators. The challenges faced by the Harvest Medley project provide insight on the process of scaling up local food systems and developing new, value-added local products for institutional markets, such as schools.

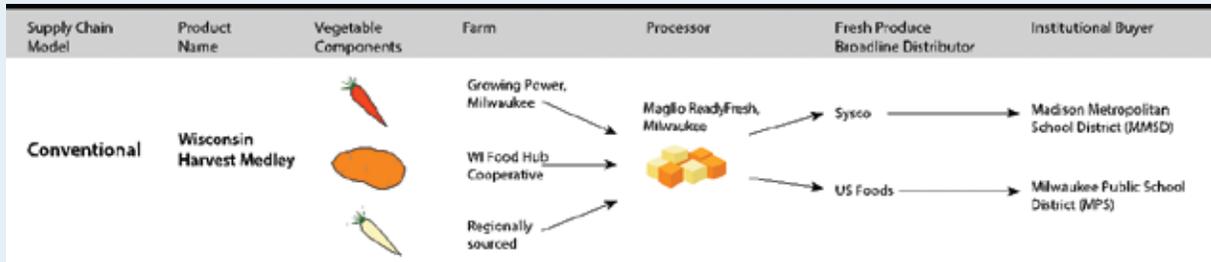
Supply and demand: In some cases, it was difficult to convince growers to increase production without a guaranteed market for a set quantity of product. Setting high production goals was deemed too risky by the producers and other supply chain partners, given uncertain demand at the start of the project’s initial growing season. The product sourcing strategy included utilization of local product first, as available, and then sourcing out in concentric circles to include regional products from neighboring states, such as Michigan and Minnesota, as in the case of the conventional and FarmLogix supply chains. The Fifth Season Cooperative was able to procure produce for their blends from within their pool of member growers and 150 mile radius. The goal was to establish a first year of market demand, with the hope that growers would see production for Harvest Medley as a viable opportunity in subsequent years.

Price: It was challenging to set an accurate price in the initial year, as volume of product available and demand were unknown. Product promotion and sales were a related challenge. School buyers wanted to know the price per serving of the finished product, while producers were focused on the price per pound of their raw product. Schools ended up paying anywhere from \$1 to \$3.15 per pound (including distributor delivery fees) for the blends, with the higher prices charged in the conventional supply chain. Generally, these first year prices were acceptable to schools for an occasional menu item, except at the highest end of this price range. As demand for Harvest Medley grows and supply stabilizes, prices are expected to moderate.

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Three supply chains used in the Wisconsin Harvest Medley project

Conventional supply chain



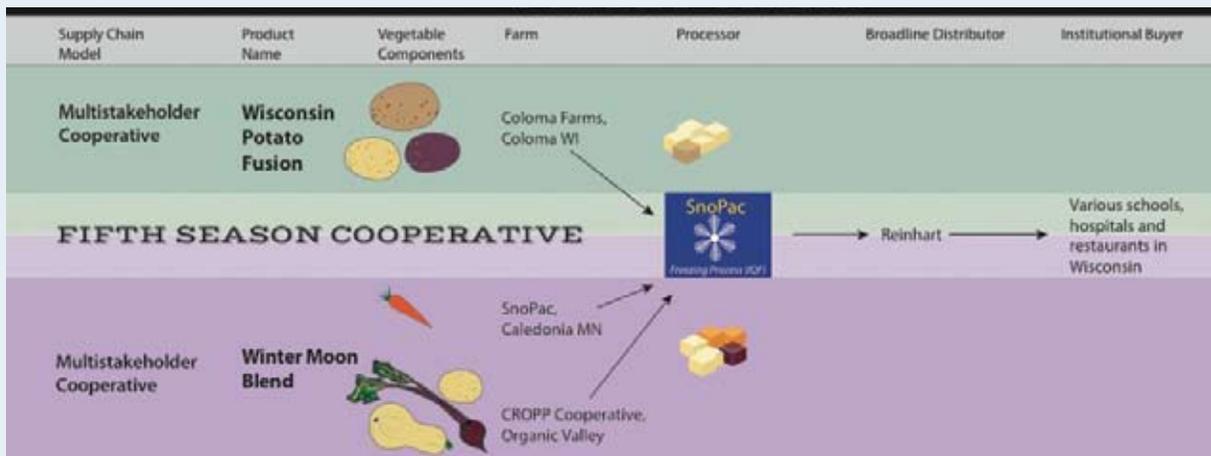
Total product sold: 32,199 pounds of Wisconsin Harvest Medley (finished product)

Conventional and online broker supply chain



Total product: 4,020 pounds of Wisconsin Harvest Medley, 960 pounds of FarmLogix Holiday Medley, and 36,000 pounds of Growing Power Carrot Coins (raw procurement)

Multi-stakeholder cooperative supply chain



Total product: 40,000 pounds of Wisconsin Potato Fusion, 40,000 pounds of Winter Moon Blend (raw procurement)

Promotion and timing: The vegetable blends were heavily promoted to be a part of October National Farm to School month, but were generally not ready for roll-out in October. Some schools were disappointed that the fresh product wasn't ready until November and the frozen version not until December. This timing worked well, however for using the blends in holiday-inspired menus, and the frozen product allowed the schools to serve local foods in the winter. For the Fifth Season Cooperative, the frozen blends extend the season for local produce sales, providing an important cash flow to support the co-op's operations. As supply chain partners gain experience with the timing of Wisconsin harvests, the Harvest Medley blends, fresh or frozen, should be available beginning mid-fall and into the winter.

Processor size and scale: A number of small- to mid-scale processors in Wisconsin and the surrounding region were interested in developing local and organic vegetable blends for all three supply chains. The project team and partners worked successfully with V. Marchese, Maglio, Testa Produce and Sno Pac to process the root vegetable blends. The processor that seemed the best fit to work with Fifth Season Cooperative on frozen blends, Sno Pac, required a minimum run of 40,000 pounds of raw product. This was more than the co-op had planned to sell. Co-op staff and the project team worked with schools to generate pre-orders, to confidently reach the minimum processing volume. This was a major milestone for the project, as it resulted in two successful new blends and future plans for the co-op to significantly increase production of both blends, as well as expand its minimally processed, value-added product line.

Changing partners and contracts: Due to changes in two contractual partnerships in the conventional supply chain, the project team experienced challenges building stable working relationships with key partners. This instability contrasts with the membership and mission-driven structure of Fifth Season Cooperative, where long-term, stable partnerships supported communication and accountability across the supply chain throughout the project.

Transparency: It was difficult to retrieve information on product origin along the conventional supply chain. Although this information is well documented for traceability purposes, product origin is generally not communicated via box labels or invoices. This creates the potential for unintended misrepresentation of a product as local. In order to avoid this situation, FarmLogix and Fifth Season Cooperative developed tracking and reporting systems that communicate farm origin to their customers. A key lesson learned is that institutions (buyers) can use their significant purchasing power to require that processors and distributors provide more information on product origin at the time of purchase.

Educational materials: For each blend, the project team created one-page educational materials, targeted to students and their families, featuring local farmers, nutritional information, and how and where the vegetables were grown. FarmLogix and Fifth Season Cooperative were already familiar with creating such educational materials and provided them regularly with their



Roasted vegetable blends can be very appealing

products. The educational materials were new, however, to most of the conventional supply chain partners and challenging to create with accuracy, due to frequent or last minute changes in product sources. It was also challenging to provide these materials directly to the schools via the distributors.

Marketing local products: During the course of promoting and selling the blends for this project, it became clear that a local food broker—a professional tasked with representing the distinctive and local aspects of the product—can help promote local products to potential buyers, such as school food service directors. In the FarmLogix and Fifth Season Cooperative supply chains, this broker function was built in and proved an effective means of communicating product differentiation.

Human resources: Tedeschi and Skipper together spent the equivalent of an 85 percent time position for approximately a year facilitating the relationships between supply chain partners, promoting the blends, and tracking project progress and data. Some of the time invested in creating partnerships did not produce tangible results. This need for added coordination shows the importance of investing up-front in human resources when building new linkages within a supply chain and developing new products. Once relationships, products and markets are initially established, the natural tension between supply and demand should further their development.

Despite these challenges, the Wisconsin Harvest Medley model can be adapted to different ingredients and supply chain relationships. Independent of the previously described partnerships and with minimal involvement of the project team, spin-off Wisconsin blends were developed and sold during the project period. These kinds of spontaneous developments show the potential for minimally processed local products. In project exit interviews, all Harvest Medley partners stated optimistic views of future production and sales, and in some cases significant plans for growth of the blends and similar products. Skipper reflects that this future growth potential is the successful outcome the project was ultimately looking for. “The Wisconsin Harvest Medley model thrives when supply chain partners committed to providing local and regional products emphasize transparency, stable working relationships, accountability and communication.”

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Wisconsin Harvest Medley promotional video: www.youtube.com/watch?v=BMiDq6Y-cmM

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— Lani Skipper, CIAS researcher

The Center for Integrated Agricultural Systems (CIAS) brings together university faculty, farmers, policy makers and others to study relationships between farming practices, farm profitability, the environment and rural vitality. Located in the College of Agricultural and Life Sciences at the UW-Madison, it fosters multidisciplinary inquiry and supports a range of research, curriculum development and program development projects. For more information on the Center or on the research in this Brief, contact: CIAS, 1535 Observatory Drive, UW-Madison, Madison, WI 53706 Phone: (608) 262-5200 E-mail: ramcnair@wisc.edu, www.cias.wisc.edu

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