



LOCAL FOOD INFRASTRUCTURE

Farmers' markets, farm stands, and other outlets for farmers to sell products—usually unprocessed produce—directly to consumers have seen sensational growth and attention in recent years. But as important as these outlets are, they are by no means the sum total of local food sales. USDA's Economic Research Service **recently illustrated** that sales to restaurants, retailers, and regional distributors are three times larger.

Selling to retailers and other “indirect” (sometimes called “intermediated”) markets requires infrastructure. Infrastructure can include things like a warehouse or cold storage facility to sort, grade and store food and keep it fresh; processing plants to cut broccoli into florets, turn strawberries into jam, or mill grain into flour for local bakeries; refrigerated trucks to transport local food; or kitchen equipment to prepare it. This infrastructure must also be scaled appropriately. Much of America's existing food infrastructure doesn't work for local and regional producers. It is often too large to accept smaller amounts of product, too far away for smaller transportation networks to reach, or unable to preserve the local identity of the food.



FAST FACTS

- The number of farmers' markets nationwide increased by 54 percent between 2008 and 2011, providing over 7,000 venues for farmers to interact directly with consumers.
- The Food Hub Web Portal, a virtual technical assistance network run by USDA's Agricultural Marketing Service, received over 5,000 site visits in its first three months.

Access to infrastructure can open up tremendous opportunities for the local economy. Value-added products such as jam or flour can bring a better price to producers than can a raw product. Commercial kitchens can launch new food businesses; processing plants or transportation networks employ workers; and cafeteria equipment helps schools utilize more local food. Access to refrigerated storage space means that a farmer can wait



SEE HOW WILD HARVEST CREAMERY IN WASHINGTON DEVELOPED AN ON-FARM PROCESSING FACILITY FOR CHEESE.

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NEBRASKA DAIRY PROCESSING PLANT DEVELOPED WITH A B&I LOAN

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for a competitive price for his or her product rather than having to sell immediately after harvest. Buyers can more easily source from many small farms without the burden of additional paperwork if the farmers have a warehouse in which to aggregate and cooperatively market their products. And production infrastructure can help producers plant crops earlier and harvest later, extending the season and their revenues. The road to new, profitable markets and to expansion beyond direct-to-consumer sales is paved with infrastructure.

ON THE GROUND: KYF AND LOCAL FOOD INFRASTRUCTURE

When the Know Your Farmer, Know Your Food initiative was launched in 2009, the KYF task force compiled tools to help producers and food business owners identify infrastructure near them. (Two examples are the [meat and poultry slaughter map](#) and the [working list of food hubs](#), discussed in detail below.) The task force also identified a slate of USDA programs available to develop additional infrastructure and looked for opportunities to share best practices between and across communities. To date, KYF has publicized and catalyzed activities around several different kinds of infrastructure to improve local and regional food system capacity across the supply chain, from on-farm season extension technology to retail facility upgrades:

PRODUCTION INFRASTRUCTURE

Local and regional producers expressed a need for technical assistance to help extend the growing season so that they could provide local consumers with food beyond the warm weather months. In response, USDA launched the [seasonal high tunnel pilot](#), run by the Natural Resources Conservation Service. Read more

about high tunnels in the **Local Stewardship** section of the KYF Compass; then see how many high tunnels USDA has supported in your state on the **KYF map**.

Local food production infrastructure can mean more than farms, too. For an aquaponics business, a warehouse counts. In the central New York community of Sherrill, USDA Rural Development is helping Aqua Vita Farms expand into a 13,000 square foot warehouse space and convert it into a greenhouse and fish farm. A 2011 **Business and Industry Guaranteed Loan** helped Oneida Savings Bank assist Aqua Vita Farms. Fish and produce will be shipped to central New York wholesalers and then to local restaurants and retailers. “Rural Development is proud to support the production of locally-produced food in Central New York and we look forward to seeing Aqua Vita’s products in our local markets,” says Rural Development State Director Jill Harvey.

PROCESSORS

Processing whole products can help producers add value to their offerings; canning or freezing perishables helps consumers maintain access to local food between growing seasons. But in recent decades, the number of processing facilities for certain agricultural products has declined by a third, leaving many local food producers without access to these opportunities. As discussed in the **Local Meat and Poultry** section of the KYF Compass, many of the remaining processing facilities have prohibitive or inflexible volume requirements, are too far away, and/or source only from producers with whom the processors have signed contracts. To help address the shortage of local processing opportunities, USDA is promoting programs that support the development of new facilities. Communities are using these resources to



USDA’s Natural Resources Conservation Service supported the construction of nearly 4,500 high tunnels on farms throughout the country in 2010 and 2011.

build innovative, job-generating processing operations. For example, in Okmulgee, Oklahoma, the Muscogee (Creek) Nation’s Mvskoke Food Sovereignty Initiative is helping Tribal members and their neighbors develop strong, economically vibrant local food systems with a processing component. With a 2010 grant through the Agricultural Marketing Service’s **Farmers’ Market Promotion Program**, MFSI is developing a value-added processing facility for produce and training community members in food safety and food processing techniques. The group is also working on a regional marketing plan for local value-added products. By processing and

marketing their own products, Tribal producers will capture a greater share of the retail dollar and keep jobs and revenues in the community.

Rural Development’s **Value-Added Producer Grants** can be used to plan and start a majority producer-owned business that adds value—usually through processing and packaging—to an agricultural commodity. In 2008, Congress directed USDA to make changes to the Value-Added Producer Grant program so that it would better serve small and limited-resource producers. In El Paso, TX, USDA **issued new rules** in 2011 that implement provisions of the 2008 Farm Bill. The changes make

Local Food Hub in Charlottesville, Virginia unloads produce in its warehouse. The food hub sources products from more than 50 farms within 100 miles of the city.



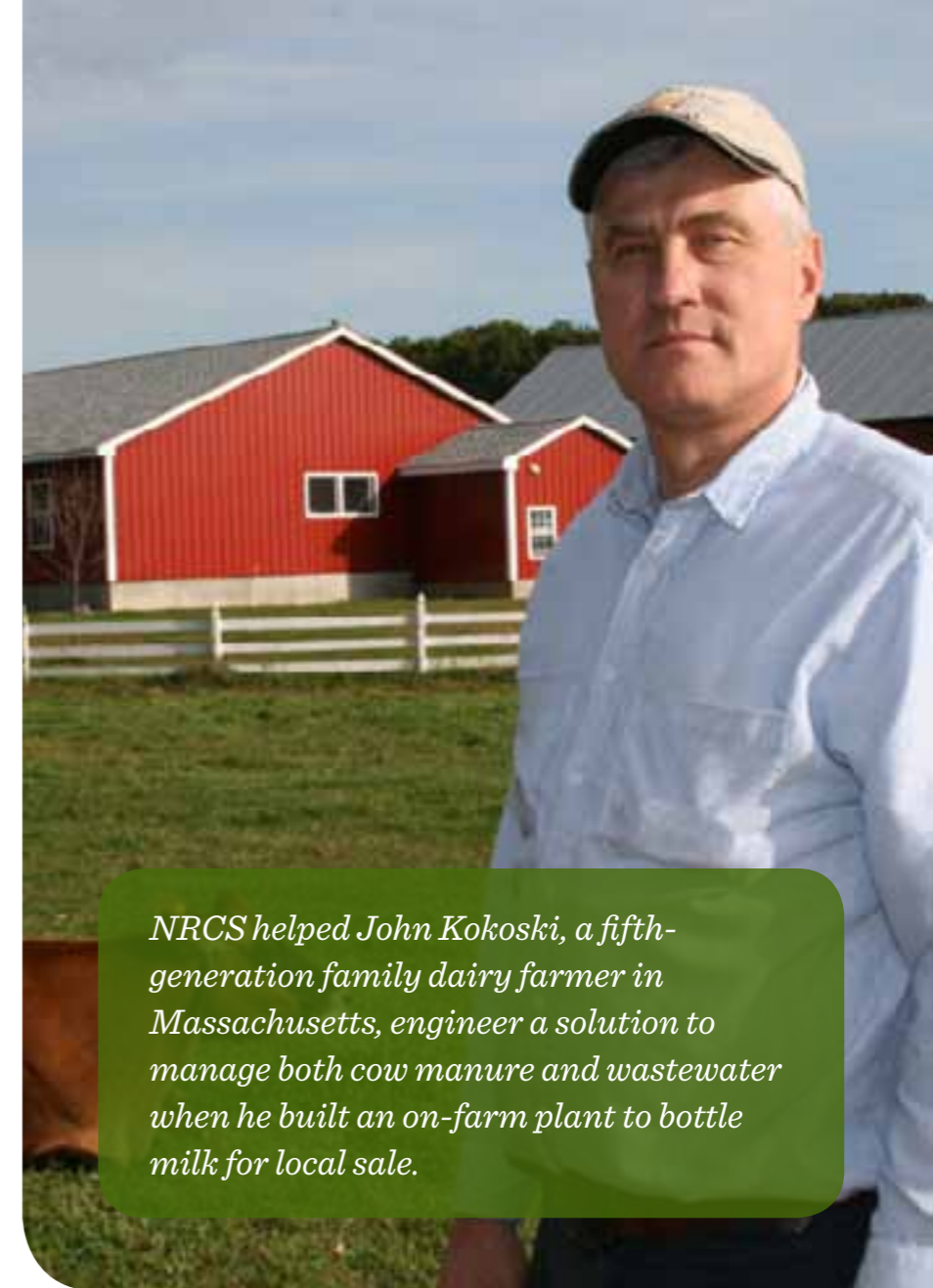
specific funds available through this grant program to beginning, socially-disadvantaged and small and mid-sized family farmers and ranchers. The program was also broadened to better support producers selling into local and regional markets. In Powhattan, Kansas, Johannes Farm secured a Value-Added Producer Grant in 2012 to de-hull, process, package and locally market their oats, which are grown without the use of pesticides, herbicides or synthetic fertilizers.

Processing has added benefits. The development of processing infrastructure is also an opportunity to address other critical issues in the food system. The Natural Resources Conservation Service is using infrastructure development as an opportunity to strengthen conservation practices on farms; for example, in Hadley, Massachusetts, NRCS helped

John Kokoski, a fifth-generation family dairy farmer, engineer a solution to manage both cow manure and wastewater when he built an on-farm plant to bottle milk for local sale. The revenues from local sales are now helping Kokoski keep his farm viable and stave off pressure from developers.

DISTRIBUTION INFRASTRUCTURE

If you live in a farming region but the only trucks in your area take food across the country, you and your neighbors may be losing out on access to local products. Several USDA programs can help develop strong regional transportation networks. For example, Rural Development's **Rural Business Enterprise Grant program** helped Nevada's Mineral County Economic Development Authority (MCEDA) purchase two



NRCS helped John Kokoski, a fifth-generation family dairy farmer in Massachusetts, engineer a solution to manage both cow manure and wastewater when he built an on-farm plant to bottle milk for local sale.

refrigerated trailers to transport farmers' products to local markets in 2011. This project is a regional effort: MCEDEA applied for the funding, Pershing County's Double Tree Ranch will lease the trailers, and Churchill County's Great Basin Basket, LLC will provide maintenance and cover operator costs and mileage. The trailers will enable rural Nevada farmers to expand the selection of food, both local produce as well as value-added products, offered at farmers'



With a 2011 Hunger Free Communities grant from USDA's Food and Nutrition Service, Centro del Obrero Fronterizo has transformed an empty warehouse into a market for local producers and consumers.



markets and CSAs in rural Nevada and in more distant metropolitan areas.

RETAIL INFRASTRUCTURE

Farmers' markets. Connecting farmers and consumers requires a place for them to come together. Farmers' markets are one example of new infrastructure that meets this need. The number of farmers' markets increased by 54 percent between 2008 and 2011, providing over 7,000 opportunities nationwide for farmers to interact directly with consumers. (Read more about farms in Illinois and Oregon that have expanded their business significantly thanks to access to farmers' markets.)

Where farmers' markets are developed, their impact on local communities can be significant. In Newport, Arkansas, a 2010 **Community Facilities grant** from Rural Development helped the community replace a

small farmers market under temporary canopies with a large pavilion structure in a high-traffic area. The number of vendors at the market increased from 8 to 20, and some vendors have seen sales increases of as much as 50 percent. A 2011 **Rural Business Enterprise Grant** from Rural Development helped the City of Marianna, Florida relocate a regional market that was in jeopardy of closing. The new market is the centerpiece of a performing arts park and provides the Jackson County Growers Association with a high-traffic venue in which to sell local products.

Winter farmers' markets are also on the rise, even in northern states. Over 1,200 markets operate through the winter nationwide, an increase of nearly 40 percent since 2010. In 2011, through the Agricultural Marketing Service's **Farmers' Market Promotion Program**, USDA partnered with Chicago-based Faith in Place to expand 15 winter farmers' markets in the city, helping reduce

A temporary structure at the current site of the Burrillville, RI Farmers Market will be replaced by a 100' x 30' covered pavilion and parking area thanks to a grant from USDA's Rural Development agency.



CASE STUDY

2

Infrastructure expands markets in Idaho

Idaho's Bounty Food Co-op, Inc. is creating a year-round local foods market between southern Idaho producers and consumers. But their customers' desire for locally produced goods exceeded the co-op's current transportation and cold-storage capacity. With 2010 funding provided through the **Rural Business Enterprise Grant** program, Wood River Resource Conservation and Development was able to provide Idaho's Bounty access to an additional refrigerated truck to ensure safe transportation of cold-storage products from their warehouse. This project not

only expanded their delivery capacity and service area, but also created a job through the immediate filling of a delivery driver position. The growth of Idaho's Bounty has created an additional distribution channel for several previous producer-recipients of **Value-Added Producer Grants** while helping restaurants and other food businesses meet consumer demand for locally produced products. Idaho's Bounty increased its revenues 30% in 2010 and another 25% in 2011 as it continues to build out its infrastructure and marketing efforts.



At Idaho's Bounty Food Co-op in Ketchum, a young customer learns about local apple varieties.

“This new [delivery] truck has been really helpful to our program. Because we’re now able to make deliveries to people’s homes, we’ve seen an increase in participation. We have also partnered with local farmers in Hoopa who provide us with a variety of produce like tomatoes, lettuce, squash and cucumbers, so we’re able to get fresh vegetables out to our people. A lot of the knowledge about growing gardens, canning food and smoking fish has been forgotten, so our other goal is to provide classes and resources for people to gain this knowledge again.”

—Keith Hostler, Executive Director,
Food Distribution Program,
Hoopa Valley Tribe, Hoopa, CA

some of the volatility in farmers’ seasonal incomes while improving consumer access to fresh, local food year-round. The Agricultural Marketing Service **tracks winter markets** and administers several other programs, including the **Specialty Crop Block Grant program**, that support them.

Mobile markets. In areas where consumers aren’t able to access a farmers’ market, markets are coming to them—another example of how infrastructure development can improve healthy food access. In far

Northern California, the **Hoopa Valley Tribe** secured a **Community Facilities grant** from Rural Development in 2009 to purchase a truck that delivers healthy food, including that grown by local producers, to over 1,200 Native American and low-income people in 13 rural counties. A second grant from USDA’s Food and Nutrition Service allowed the tribe to purchase an additional refrigerated truck.

Brick-and-mortar retail. For grocers and other traditional retailers, local food offerings are pulling in



Tyler Brown is Farm Manager of Civic Works’ Real Food Farm in Baltimore, which delivers produce via mobile market to low-income neighborhoods and other markets in the city.



(Above) Manager Mark Regni and Architect Bruce Becker celebrate the ribbon-cutting ceremony for Elm City Market, the first full-service grocery store in downtown New Haven. The store created 100 new jobs and was supported by a guaranteed loan from USDA.

(Below) Alex Gyori, manager of the Brattleboro Food Co-op in Vermont, smiles as he envisions an expanded store made possible with a guaranteed loan from USDA. Since its opening in 1979, the coop has grown from a tiny warehouse to a \$17 million operation supporting 109 jobs and 146 farmers.



more customers, boosting revenues and creating jobs. In New Haven, CT, a city where one in four people live in poverty, a **Business and Industry Guaranteed Loan** helped construct the first full-service grocery store in the inner city in 2011. Elm City Market created 100 new jobs for local residents with salaries starting at twice the minimum wage. But the community didn't stop there: the store is sourcing over half of its products from producers within 200 miles of the city. The store reports brisk business, serving community members that previously lacked access to the products grown just miles away from them. Vermont's **Brattleboro Food Coop** has grown from a tiny warehouse storefront in 1979 into a \$17 million operation supporting 109 high-quality jobs; the coop secured a 2010 **Business and Industry Guaranteed Loan** from USDA Rural Development to expand into a larger space and offer additional retail capacity for the 146 local farmers and 46 local food producers who sell there.

KITCHEN FACILITIES

The final step in the farm to consumer infrastructure chain is food preparation, where infrastructure can bring opportunities for food entrepreneurs and greater access to local food for schools and other institutions.

Commercial kitchens. A publicly accessible commercial kitchen provides opportunities for aspiring entrepreneurs without high startup costs. The town of York, **Pennsylvania** secured a 2010 **Rural Business Enterprise Grant** from Rural Development to open a commercial kitchen within its 100-year-old Central Market in 2011; the Progress Center in Norway, **Maine** is using a **Community Facilities grant** to renovate its kitchen, allowing it to serve 200 meals a day to residents in need using locally grown food; and in **Tennessee**, the Cumberland Culinary Center used an RBEG to develop



VALUE ADDED PRODUCER GRANT PROGRAM WITH USDA DEPUTY SECRETARY MERRIGAN

[Click here to watch the video](#)



(Above) Deputy Secretary of Agriculture Kathleen Merrigan visits YorKitchen, a commercial kitchen in York, Pennsylvania supported by a 2010 Rural Business Enterprise Grant from Rural Development.

(Below) Deputy Secretary Kathleen Merrigan and Ron Reed of Ron Reed's Signature Barbeque Sauce Company in the Cumberland Community Center, a commercial kitchen in Tennessee supported by an RBEG from USDA Rural Development.

a commercial kitchen and small business incubator. Six small businesses that use the kitchen are marketing their products and seven are in development, paying a rental fee for services that would otherwise cost them thousands of dollars.

Local Roots Market and Café in Wooster, Ohio is also developing a commercial kitchen with 2011 financial support from Rural Development. When the kitchen comes on line, Local Roots expects 25 businesses to benefit from increased revenues and 10 new businesses to start up as a result of kitchen access. Local Roots began in 2009 as a year-round farmers' market and has expanded rapidly since then, incorporating as a cooperative in 2010. Today, it has some 800 members

and sells food from 150 local producers, who take home 90 percent of their gross sales.

Putting kitchens back in cafeterias. Many schools are limited by a lack of kitchen equipment and must rely on pre-prepared foods rather than fresh, local food that requires some preparation. USDA is helping schools transcend that barrier. In Maryland, the Harford County Board of Education received a **Community Facilities grant** from Rural Development in 2010 to expand its refrigeration and freezer equipment at the Food Services central warehouse facility. The expanded space will allow for the purchase of additional locally grown produce for the 39,000 public school students in the district—a benefit to both students and Maryland





The Big River Farms Program of Minnesota Food Association (MFA) operates an immigrant and minority farmer training program together with a Community Supported Agriculture (CSA) and wholesale distribution service.

producers. Learn more about how schools can utilize Community Facility loan and grant funds [here](#).

PULLING IT ALL TOGETHER: REGIONAL FOOD HUBS, COOPERATIVES AND TERMINAL MARKETS

With so many links in the chain connecting farmers and consumers, some entrepreneurs are combining multiple links into one business. “Food hubs” are a case in point. A food hub is a business or organization that actively coordinates the aggregation, storage, distribution, and/or marketing of locally or regionally produced food. By aggregating the products of many individual farmers and providing economies of scale for insurance, packaging, and other services, food hubs are able to help local producers reach a larger range of markets than they could otherwise, including selling to large regional buyers.

Food hubs have a track record of contributing to the local economy and working well for smaller farmers. For example, in **Oklahoma**, a regional cooperative-turned-food hub provides 200 Oklahoma producers with a place to aggregate, store, label and cooperatively market their products. The hub distributes the products to 50 sites around the state, generating about \$70,000 in monthly sales. Sales increased 20-fold between 2004 and 2010 and the number of producers participating increased 10-fold. The food hub received a Farmers’ Market Promotion Program grant from USDA’s Agricultural Marketing Service to support the expansion.

In some instances, the aggregation of farmers’ and ranchers’ products takes place virtually rather than in a physical location. In creating **FoodHub**, a first-of-its-kind online tool to connect wholesale food buyers



Workers at the Oklahoma Food Coop pack eggs. The coop operates as a food hub with 200 participating producers generating \$70k in monthly sales. Sales increased 20-fold between 2004 and 2010.

CASE STUDY

3

La Montanita: USDA's Rural Cooperative Development Grant Program

La Montanita, a retail cooperative in New Mexico, established a regional food hub in 2007 to expand the amount of local food available to the co-op's four stores and to assist regional producers in accessing other wholesale market channels for their products. The co-op and hub market more than 1,500 products from 900 producers within a 300-mile radius of Albuquerque, employ more than 200 full and part-time staff, and serve 17,000 coop members. The food hub offers producers 1,500 square feet of refrigerated storage, 500 square feet of refrigerated space and over 4,000 square feet of dry storage; refrigerated trucks for pick-up and delivery; and

marketing services. By 2010, the food hub had sales of \$2.7 million. Says former General Manager C.E. Pugh of the co-op's decision to gain a competitive edge through local sourcing: "We began to look out and say... how are we going to maintain our position in the marketplace 10 years from now, 15 years from now, 20 years from now? It just seemed clear that the support of local products made a lot of sense." He continues, "As a result of this work... we've seen sustained double-digit growth when the industry as a whole has dropped to single digits." In 2010, La Montanita received support through USDA's [Rural Cooperative Development Grant program](#) to expand the co-op's work.





The new Brattleboro food coop will increase the space available to the 146 local producers and food businesses that sell there. The construction was made possible by a loan guarantee from USDA Rural Development.



Bruce Johnson, owner of the Dragonfly Farm inventories beef in Beaverdam, VA, on May 6, 2011. The products from Dragonfly and other farms are distributed with the help of other suppliers participating with Fall Line Farms Food Hub.

and sellers, Oregon-based Ecotrust built just such an aggregation tool using Rural Business Opportunity Grant funding from USDA Rural Development.

To respond to the burgeoning interest in food hubs across the country, a KYF subcommittee was established at USDA in 2009 with the Agricultural Marketing Service as the lead agency. The subcommittee has identified USDA resources used to study or develop food hubs; compiled case studies into a regional food distribution report; developed an **inventory of food hubs** currently operating or in development; and, in coordination with the National Good Food Network, offers **webinars and other training opportunities** for existing and aspiring food hub developers. A recent webinar had nearly 500 participants on the line and has been viewed by hundreds more since then.

Additionally, AMS staff responded to more than 200 food hub-related inquiries from producers and others in 2010 and 2011. The information the agency has gathered is also available through the AMS **food hub web portal**, a virtual technical assistance network launched in July 2011. By September 2011, the site had already received over 5,000 visits.

Cooperatives. Food hubs can be organized under a variety of business models, including small businesses, nonprofit organizations, buying clubs, or producer or retail cooperatives. Producer cooperatives, which are locally or regionally owned by their members, are a natural fit to participate in or create a food hub in order to aggregate, store and market members' products to a variety of buyers. Retail cooperatives, which are owned by consumer members, are also a model that has been used to develop food hubs that aggregate farmers'



CASE STUDY

4

Eastern Market in Detroit, Michigan Transforming from Traditional Market to Food Hub

A public market for over a hundred years, Eastern Market in Detroit, Michigan is transforming from a traditional market to a food hub—and more. The market consists of four individual markets: retail (for consumers), wholesale (for grocery stores, distributors and restaurants), flowers, and special events. More than 250 vendors from Michigan, Ohio, and Ontario process, wholesale, and retail their food at the market, which also coordinates aggregation, distribution, processing, and commercial sales for many of the region's small and mid-size farmers. In 2010, the market ramped up its research and planning, entering into a [cooperative research agreement](#) with USDA's Agricultural Marketing Service to expand the

availability of healthy, local food throughout Detroit. The market also plans to redevelop an economic development district to bring in additional business incubators, restaurants, retailers, wholesale services and a distribution center. The market is currently partnering with the Detroit Public Schools to help them work toward meeting their internal goal of converting 30 percent of their \$16 million annual food purchases to Michigan-grown and minimally processed foods. And as a major gathering place for consumer-direct retail purchases as well as wholesale transactions, Eastern Market also processes up to \$30,000 in SNAP (food stamp) benefits each month.





Under Secretary for Rural Development Dallas Tonsager looks at a sales sheet at the High Plains Food Cooperative during a visit in 2009. The coop helps Colorado producers reach new markets and distribute their products.

products and offer them for sale to consumers. Read more about these models [here](#).

A major supporter of cooperatives in the field is USDA Rural Development, which provides [Rural Cooperative Development Grants](#). One of these grants helped the Rocky Mountain Farmers Union assist the High Plains Food Cooperative in Colorado, a network of High Plains and Rocky Mountain Front Range producers and consumers, launch an online farmers' market where consumers can order products for delivery from coop member-producers.

Terminal markets. Wholesale produce markets, sometimes known as terminal markets, are storage and transportation facilities used to trade

agricultural products in or near major metropolitan areas. Historically, they have served as places where wholesale buyers can purchase products coming in from all corners of the country or the globe. Since the inception of KYF, USDA has begun to investigate whether wholesale market facilities could provide appropriate space and infrastructure to help small and mid-sized local and regional producers better meet the surge in demand for local and regional products. As part of a cooperative research agreement with the Wallace Center of Winrock International, and in consultation with the North American Produce Market Managers Association and United Fresh Produce Association, USDA's Agricultural Marketing Service is surveying the existing produce terminal network to

assess the availability of underutilized capacity and infrastructure.

USDA has already seen some wholesale markets make the shift toward serving local producers. Detroit's Eastern Market, a public market for over 100 years, is a hybrid market with wholesale and retail functions. Learn more about its efforts to connect local producers and consumers while expanding food access in Detroit.

USDA is supporting infrastructure development all along the supply chain. For examples of funded infrastructure projects in your region, see the [KYF Map](#).