



Commentary

Farming in a changing world

By Jim Mulhern, CEO National Milk Producers Federation

One of the hallmarks of farming in America is that food and fiber producers continue to innovate and use new methods to become better at what they do. Across the 10 decades that the National Milk Producers

Federation has represented the economic and public policy interests of dairy farmers and cooperatives, the theme of relentless improvement in milk production has been a constant.

Our members produce more milk today than ever before, with fewer cows and less of an environmental footprint. It's a story that needs to be told more often, because it drives home the point that innovation serves farmers and consumers alike.

The role of cooperatives has also changed over the years.

ops since the year 2000. Many of these challenges are unprecedented, having less to do with economic volatility brought about by global supply and demand pressures, and much more to do with consumer expectations about *how* milk is produced.

Today, providing a safe, nutritious and fresh product is a given. Everyone in dairy farming in America does that. The larger challenges are those we also see elsewhere in agriculture. The notion of how to practice sustainable farming, in all its forms, looms large over the barnyard. Ag organizations, such as ours, have responded by developing tools and programs to help farmers with these new challenges.

As articles elsewhere in this magazine describe, farms in the 21st century need to be mindful of their environmental footprint as well as how they maximize cow comfort. Regulations affecting air and water quality are expanding, at both the state and national levels. NMPF has been part of a

The notion of how to practice sustainable farming, in all its forms, looms large over the barnyard.

In the early 20th century, cooperatives helped find a home for the day's milk harvest in the market, which was typically a city near where the co-op's members farmed. Today, just as we have fewer but larger farms, we also have fewer but larger cooperatives. And that means the expectations of these cooperatives have grown.

Today's cooperatives often must manage a stable of consumer brands. They have to understand how to market milk domestically as well as internationally, because one-seventh of U.S. milk production is exported. And co-ops have to help their members deal with the increasingly complicated world of risk management, environmental regulations and animal care.

In fact, one of the most striking things that has changed in the past generation in dairy farming is the advent of a whole host of societal pressures that are felt most acutely at the farmer's front door. In our 100th anniversary booklet, which looks back at the dairy business since 1916, we devoted the last chapter to the issues facing farmers and cocross-industry coalition in the dairy industry that started a new company last year, Newtrient LLC, the purpose of which is to create a business that incentivizes markets for manure-based products, turning a potential liability into an asset.

In a similar vein, the Farmers Assuring Responsible Management program, which is also a pan-industry effort, has in the past five years helped define the best practices in dairy animal care, and created a structure to educate farmers to adopt those practices. The goal is to assure consumers that we are "walking the walk" when it comes to producing milk responsibly.

These efforts were not an objective for NMPF during the first eight decades of its existence. However, the world has changed, and just as farming is more efficient in the 21st century — even as it faces a different set of challenges than in the past — farmer-led organizations need to continually redefine how to deliver the right mix of services and leadership to their members.

Features

Volume 83, Number 2 March/April 2016

Rural Cooperatives (1088-8845) is published bimonthly by USDA Rural Development, 1400 Independence Ave. SW, Stop 0705, Washington, DC. 20250-0705.

The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of the Department. Periodicals postage paid at Washington, DC. and additional mailing offices. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC, 20402, at \$23 per year. Postmaster: send address change to: Rural Cooperatives, USDA/RBS, Stop 3255, Wash., DC 20250-3255.

Mention in Rural Cooperatives of company and brand names does not signify endorsement over other companies' products and services.

Unless otherwise stated, articles in this publication are not copyrighted and may be reprinted freely. Any opinions express-ed are those of the writers, and do not necessarily reflect those of USDA or its employees.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident. ■ Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English. ■ To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov. ■ USDA is an equal opportunity provider, employer, and lender.



United States Department of Agriculture

Tom Vilsack, Secretary of Agriculture

Lisa Mensah, Under Secretary, **USDA Rural Development**

Dan Campbell, Editor

Stephen Hall / KOTA, Design

Have a cooperative-related question? Call (202) 720-6483, or email: coopinfo@wdc.usda.gov

This publication was printed with vegetable oil-based ink.



4 Easy Does It

Maryland dairy farmers work to improve estuaries, ease environmental impact By Genevieve Lister

10 New dairy shed boosts production, reduces environmental impact

By Charlie Rahm

12 Farming Smart

Prairie Farms Co-op, McDonald's "test drive" online toolbox to reduce greenhouse gases

14 Legacy of Leadership

National Milk Producers Federation celebrates 100 years of service to dairy farmers,

19 Congressional Co-op Business Caucus formed

26 Managing through uncertainty

Examining the strategic response of U.S. pork co-ops to ag industrialization may offer lessons for future By Julie A. Hogeland

Departments

- **2** COMMENTARY
- 20 IN THE SPOTLIGHT: DENNIS BOLLING
- 22 LEGAL CORNER
- 33 NEWSLINE

ON THE COVER: Debbie and Matt Hoff, with daughters Alicia (left) and Brook, feed one of the newest additions to their herd. The Hoff family has been recognized by USDA for adopting farming practices that help protect the Chesapeake Bay eco-system. USDA photo by Lance Cheung





Easy Does It

Maryland dairy farmers work to improve estuaries, ease environmental impact



Debbie Hoff (facing page) scoops feed pellets on her family's farm near New Windsor, Md. USDA photo by Lance Cheung

Protecting streams such as this, which flow into the Chesapeake Bay, is the goal of the environmental practices adopted on Coldsprings Farms. USDA/NRCS photo

By Genevieve Lister genevieve.lister@md.usda.gov

Editor's note: Lister is a public affairs officer with USDA's Natural Resources Conservation Service in Maryland.



Producing high-quality, nutritious milk may be a top priority for Coldsprings Farm, but it is not the farm's only accomplishment. Nestled

between the rolling farmland and lush green meadows of New Windsor, Md., lies a showcase of a dairy farm where owners Matt and Debbie Hoff are working with USDA's Natural Resources Conservation Service

(NRCS) to reduce runoff of nutrients and sediment, leading to cleaner water downstream.

This is especially important, as Coldsprings Farm sits amid the Monocacy watershed, which eventually flows into the Chesapeake Bay.

At 64,000 square miles and holding more than 150 rivers and streams, the Chesapeake Bay watershed is North America's largest estuary. NRCS recently marked National Estuaries Week by highlighting the stewardship of farmers such as the Hoff family, who voluntarily use conservation practices to improve water quality in estuaries downstream from their operation.

Coldsprings Farm is one of the largest family-owned dairy farms in Maryland, with a herd of 1,100 Holsteins, in addition to 2,200

acres of crops. Five generations of the Hoff family — members of the Maryland-Virginia Milk Producers Cooperative — have farmed this land, using manure management practices, no-till, cover crops and riparian buffers to minimize runoff of nutrient and sediment while maintaining a productive farming operation.

With a large herd comes a lot of animal waste. To ensure the waste from their herd does not leave the farm and enter into local waterways, the Hoffs recently constructed a manure storage structure, with assistance from NRCS and the Environmental Quality Incentives Program (EQIP). The structure was built with a roof runoff system to ensure

If cows could talk: "Hey Boss, how about a little more chow over here!" Matt Hoff has more than 1,000 hungry cows like these to keep fed on his farm. He has been on the board of directors of the Maryland & Virginia Milk Producers Cooperative for the past eight years. Opposite page: Debbie Hoff delivers feed to the calf stalls.



for managing animal manure.

Anaerobic digester technology is actually fairly basic: cattle manure is pumped into a tank (the Hoffs plan to use a concrete tank, although some digesters use steel tanks) where anaerobic bacteria break down components by feeding on the volatile fatty acids of the manure, creating methane gas.

The gas is then converted into clean, renewable energy that is an alternative to fossil fuels. Until fairly recently, digester systems were mostly feasible only for large dairy farms, but technological advances have also made these systems feasible on smaller farms, according to the Wisconsin Milk Marketing Board.

In 2010, the U.S. Environmental Protection Administration (EPA) estimated that there were 157 commercial-scale digesters nationwide, of which 143 digester systems were

By Dan Campbell, editor

Even with the many environmental stewardship efforts Coldsprings Farms has already embarked on, Matt and Debbie Hoff are planning to ratchet up their efforts still further to reduce the impact of their farm on the Chesapeake Bay ecosystem. In the near future, they plan to build an anaerobic digester system that will transform cow manure into methane gas for green energy, as well as a source of sterile, dryfibrous material that can be used as a soil amendment or for cow bedding. The digester will help reduce the odors associated with manure storage on the farm, Matt says.

To help finance the project, the Hoffs were recently awarded a grant from the Maryland Energy Administration. They are also applying for a grant under the state's Animal Waste Technology Fund, which provides incentives to farmers to adopt new technologies that provide alternative strategies



farmer owned and operated, using only livestock manure for "fuel." The popularity of on-farm digesters has increased since then as more farmers, such as the Hoff family, look for ways to operate in an environmentally benign way.

A 2013 Dairy Innovation Center-commissioned study identified a \$3 billion potential market for digesters on 2,647 dairy farms. In 2014, USDA, the EPA and the U.S. Department of Energy worked in conjunction with the dairy industry to produce the Biogas Opportunities Roadmap (www.usda.gov/oce/reports/energy/Biogas_Opportunities_Ro admap_8-1-14.pdf).

USDA Rural Development has a number of programs that can help fund construction of anaerobic digesters. These include the Rural Energy for America Program (REAP) Grants and Loans and Business and Industry (B&I) Guaranteed Loans. The Biorefinery, Renewable Chemical and Biobased

Product Manufacturing Assistance Program can also help fund digesters. For more information on these programs, visit: www.rd.usda.gov.

Many people who have lived in the proximity of his dairy farm for many years "still have no idea we are even here," Matt says.

The commitment to environmental stewardship is also embraced by Matt and Debbie's three daughters: Courtney, 19, Brook, 17, and Alicia, 15. Courtney is a freshman at Cornell University in New York, where she plans to major in dairy science. "All the girls love working with animals and farming," Matt says. Still, he says he would never pressure any of his girls to choose farming as their life's work unless it is something they want to do and are committed to.



By Dan Campbell, editor

The Matt and Debbie Hoff family has been a member of the Maryland & Virginia Milk Producers Cooperative for about 45 years, and Matt Hoff has been on the co-op's board of directors for eight years. The board experience has helped him gain a much better understanding of the business strategy that goes into running one of the nation's major dairy businesses.

The co-op, which began in 1920, today has about 1,500 family-farm members in the Mid-Atlantic and Southeast regions. It handles more than 3 billion pounds of fresh milk annually, meeting consumer needs in such major metro areas as Baltimore, Md., Washington, D.C., Richmond, Va., Charlotte, N.C., and Atlanta, Ga., among others. The co-op operates two fluid processing plants, two manufacturing plants and a farm supply equipment division.

"Like any business, we've had to make some tough decisions (regarding co-op facilities, services, etc.) over the years," Matt says. "The actions you take as a director are not always the one's you would like to make, but that ultimately have to be made for the good of the membership as a whole."

Getting members more involved in the co-op and

cultivating a new generation of co-op leaders is something every cooperative should be involved in, and that is certainly the case at Maryland & Virginia Milk Producers. One program Matt is quite enthused about is the co-op's Leadership Council, a program which was launched in 2009 "to get more members more deeply involved in the co-op." The council has 105 members, 21 members from each of the five cooperative districts. They meet twice a year with the co-op board of directors and senior management to gain insight into the business strategies and functions of their co-op, as well as to provide input to help co-op mangers get a better grasp on the views and needs of the membership.

"Being on the council gives a member a better understanding of why the co-op takes the actions it does. Sometimes a decision will not always be popular with everyone. But if you understand the reasons behind the decision, it is more likely you will support it."

Over the past 20 years, Maryland & Virginia Milk Producers has greatly expanded its trade territory, Hoff notes. "The coop has a significantly larger footprint today," he says. The growth has expanded the co-op's flexibility in the marketplace. He can see the benefits on his own farm, where

that clean water is kept clean and is directed to a suitable outlet. They also are using a practice called "heavy use area protection," which helps keep soil in place in areas with a lot of cattle traffic.

"One of our biggest challenges is moving and storing manure," Matt Hoff says. "We have enough storage now to hold close to six months of manure."

With proper storage, the Hoffs can use the manure as valuable fertilizer on their crops, applying it at the optimal rate and time. They use an aerator to incorporate the manure directly into

Alicia and Brook Hoff (left) say they love working with the animals on their family farm. Tomorrow's cooperative leaders are now learning the skills they will need in the future. USDA photo by Lance Cheung. Below: "Fuel Up to Play 60" is the nation's largest in-school health and wellness program. It encourages students to eat a healthy diet and get at least 60 minutes of physical activity daily. Photo courtesy National Dairy Council

the soil. This ensures the crops take up the nutrients with minimal leaching and runoff.

The conservation ethic runs deep for the Hoff family, who started farming the land in 1869. Matt's father, Marlin, traveled the countryside as a young boy and was inspired by the exemplary care some farmers took of their animals and

Marlin stopped tilling a few of his crop fields in the early 1970s, and by the early 1990s, the farm was 100 percent no-till. The Hoffs were also early adopters of cover crops, growing small grains, legumes and grasses between their regular corn and soybean plantings. Leaving crop residue on the field and planting cover crops protects the soil and improves its structure, resulting in less runoff during storms.

"Cover crops really cut down on erosion loss — that's the biggest reason we plant them," says Matt. "We've also seen a big difference in the soil biology, and a big benefit in the next crop. Now, every acre that we combine off, we

plant cover crops on."

The Hoffs planted grasses, trees and shrubs along the edges of their field to slow and absorb runoff. Buffer practices are critical to the Chesapeake Bay restoration effort.

"The edges are always a challenge on the field anyway, because of deer pressure and trees," says Matt. "By putting in buffers, I don't think we've removed a huge amount of productive ground and it helps keep nutrients on the field and out of the stream."

The Hoffs are just one example of the many agricultural producers who are working with USDA/NRCS to adopt conservation practices that lead to cleaner water downstream, protecting valuable estuaries like the Chesapeake Bay.

For more information about technical and financial assistance available through NRCS conservation programs, visit: www.nrcs.usda.gov/wps/portal/nrcs/site /national/home/. ■



— depending on the seasonal shifts in market demand — his milk can be shipped in any of several directions.

As if running a large farm and serving on the co-op board wasn't enough to keep him busy, Matt also serves on the Maryland Dairy Advisory Board, the Maryland State Fair Board, the state Farm Bureau Dairy Committee, the board of his county Farm Bureau and the board of the Carroll County Soil Conservation District. He has in the past served on the Maryland Agriculture Commission and as a delegate to the National Holstein Convention. Debbie Hoff is also a multitasker who keeps the farm's computer system humming, works with

the calves and is a local 4-H leader in the county.

Until recently, Matt was also a member of the board of directors for Mid-Atlantic Dairy Association, an experience that provided him with insight into how the dairy industry directs its consumer education and promotion programs.

One education effort that he enthusiastically supported is the "Fuel Up to Play 60" program, the nation's largest in-school health and wellness program, which was developed in 2009 by National Dairy Council and National Football League, in collaboration with USDA. The program encourages students to eat a healthy diet and get at least 60 minutes of physical activity every day. As a dairy industry spokesman for the program, Matt made school visits around Maryland with members of the Baltimore Ravens.

So why should a farmer belong to a co-op? "Being in a cooperative makes it easier for a farmer to concentrate on farming and to let the co-op do the value-added processing and marketing," he notes "We have some independent dairy farms around here, but most of us belong to a cooperative," he says. Of his family's nearly half century of membership in Maryland & Virginia Milk Producers, he says: "The co-op has always been there for us, through all kinds of times."



New dairy shed boosts production, reduces environmental impact

By Charlie Rahm

e-mail: charlie.rahm@mo.usda.gov

Editor's note: Rahm is a public affairs officer with USDA's Natural Resources Conservation Service (NRCS) in Missouri.



Polk County, Missouri, dairy farmer Nelson Hostetler can think of a ton of reasons to like his new dairy shed and

animal waste system. The most obvious reasons are documented in his daily production log. It shows that the 100 cows that formerly resided in a couple of pastures are producing about 2,000 more pounds of milk each day since they were moved into the shed less than a year ago.

"We're right at 20 pounds more per cow today than we were a year ago," Hostetler says. When the shed was built, he projected that he needed to get six more pounds of milk per cow each day to pay for the investment. "I expected it to work well, but it's working better than I expected."

Hostetler is a member of Central Equity Milk Cooperative (CEMC), based in Springfield, Mo. Co-op members include about 130 dairy farm families in Missouri, Kansas, Oklahoma and Arkansas. CEMC began in the 1980s, with the mission of marketing high-component milk at an equitable price. The co-op fulfills that mission by supplying milk to its primary customer, Eagle Family Foods, one of the nation's largest manufacturers of evaporated and sweetened condensed milk.

USDA provides key help

What Hostetler built, with design and financial assistance from the USDA Natural Resources Conservation Service (NRCS), is a completely



covered structure in which the cows rest in stalls bedded with a thick layer of sand. The structure has curtains that can be opened or closed, depending on the outside temperature. When the cows want to eat or drink, they leave their stalls and walk across the alleys to get to the food and water.

The alleys are part of a flush system in which water is released from large, gravity-driven flush tanks. The water washes the animals' waste and sand that gets kicked out of the stalls to an outside area. There the sand settles and the water and waste enter a gravity solid separator. The solid waste remains in the separator while the liquid travels through a pipe to a lagoon.

The liquid is then pumped from the

lagoon back into the tanks for re-use. The sand is pushed into piles where it dries in the sun; then it is put back into the stalls. The solid waste is eventually removed from the separator and spread to fertilize Hostetler's crop fields.

The shed includes some cow-friendly amenities, such as a spinning brush that cows can activate to brush off dead hair and stimulate

new hair growth. While the cows seem content to eat, drink and lie in the stalls when they are not being milked, Hostetler has plans to build some adjacent exercise pens to allow the cows to go outside in good weather.

Hostetler has noticed fewer health issues with his cows because the flushed alleys keep them cleaner. He has increased his herd size by 25 percent and is now milking about 125 cows per day, without any increased labor. One reason for this increased production is "cow comfort," he says. "If it rains or snows out there, these cows can just lie in here in the sand." Less stress from weather means more productive cows.

Protecting streams

The system also protects the environment by keeping animal waste on-farm, where it is re-used as nutrients instead of washing into streams.

NRCS engineers worked with Hostetler to design a system to meet his wishes, while also addressing the resource concerns. The engineers and Hostetler visited a number of other dairy farms to get ideas. "We went through multiple design revisions until we finally found one that fit," says NRCS engineer Michael Malone.

"What I have is kind of what I always dreamed about," Hostetler says. "Without (NRCS') help, we would not have been able to do this. We would have had to do it in small stages."

Through its Environmental Quality Incentives Program (EQIP), NRCS helped cover part of the costs of the shed, flush system, solid waste separator and lagoon. To learn about the EQIP program and how NRCS can help with other conservation practices, contact your local USDA Service Center, or: www.nrcs.usdsa.gov.

The new cattle shed includes cow-friendly amenities, such as this back-scratcher (top) that cows can activate to brush off dead hair. "Comfy cows" are productive cows: the herd is averaging 20 pounds more milk per cow daily since the new facility was built.



Ten Prairie Farms co-op members, including the Hemker family (below), participated in the Farm Smart pilot program to help identify on-farm practices that can reduce greenhouse gas emissions. A co-op delivery truck (also below), makes a food donation to a local food bank – one of the many ways co-ops support their communities. Photos courtesy Prairie Farms



Prairie Farms Co-op, McDonald's "test drive" online toolbox to reduce greenhouse gases

Editor's note: This article incorporates information excerpted and adapted from the Innovation Center for U.S. Dairy reports and videos. The Innovation Center was established in 2008 through Dairy Management Inc., a nonprofit organization that manages the national dairy checkoff program on behalf of America's 45,000 dairy farmers. For more information about the Farm Smart program, visit: USDairy.com/FarmSmart.



U.S. dairy cooperatives and their farmermembers — who produce more than 80 percent of the nation's milk — are striving to help meet the voluntary industry goal of achieving a 25-percent reduction in the

intensity of greenhouse gas emissions by the year 2020. Adopting sustainable farming and processing practices needed to reach that goal will not only benefit the environment, but can also help improve the bottom line for farms and co-ops. It also helps to make their products more attractive to food-industry customers.

Farm Smart is an online program, developed by the Innovation Center, which provides farmers and processors with an online "toolbox" to measure progress toward on-farm sustainability goals.

Farm Smart was designed to help farmers:

• Learn about their farm's environmental footprint and understand how it is interrelated with the farm's financial performance and efficiency;

- Innovate by identifying areas for potential improvement;
- Track progress in a secure, confidential data platform.

By using feedback from farmers, cooperatives and retailers who participated in a pilot test of the tool's capabilities in 2013 and 2014, new features were added to Farm Smart to allow better understanding of a milk supply's environmental footprint and to better communicate farmers' and cooperatives' continuous improvement over time.

Prairie Farms members step forward

To field test these tools, Prairie Farms Dairy cooperative, Carlinville, Ill., and McDonald's Corporation, Oak Brook, Ill., cooperated on a pilot program to assess how well Farm Smart tracks and measures environmental impacts, from feed, to farm, to processing plant, to retailer.

"We're all in this together: the farmer, processor and retailer," says Tom Hemker, a Prairie Farms member who operates a dairy farm near Bartelso, Ill. He is one of 10 co-op farmers who participated in the pilot. "We put our heart and soul into our work every day to make sure we are producing good, wholesome food," he adds.

Dale Thole, a Prairie Farms dairyman from Aviston, Ill., says participating in the pilot has also been rewarding for his family. "The Farm Smart program...should help us put our products out there in a good light," he says, adding that the productivity of this farm has improved as a result.

Safeguarding water supplies

Clean, plentiful water is a critical resource for sustainable agricultural production. Changing climate, ongoing droughts, growing populations and competing water needs all combine to heighten the necessity for innovative approaches to ensuring water quality and supply. The Innovation Center for U.S. Dairy is involved in identifying strategies that help farmers conserve and protect the quality of our nation's water supplies.

To help encourage practices that reduce agriculture's impact on the environment, the Innovation Center annually recognizes farmers and processors through the U.S. Dairy Sustainability Award Program.

Tom Barcellos, who operates the T-Bar Dairy and White Gold Dairy farms near Tulare, Calif., is a recent recipient of an honorable mention award in the Outstanding Achievement in Resource Stewardship category. Barcellos was the first dairy farmer in the drought-ridden Central Valley of California to successfully implement conservation tillage. A combination of no-till and strip-till farming methods has helped Barcellos manage for water scarcity while allowing him to dramatically reduce chemical



use, fuel use and the amount of dust particles the farm discharges into the air.

Conservation practices on modern dairy farms also include the use of heat exchangers that help cool milk as cold water flows past the milk in a separate tube. Water from heat exchangers is then collected and used as drinking water for cows. Using manure to meet crop nutrient requirements also can improve the productivity and water-holding capacity of the soil, which can minimize the amount of ground water needed to grow crops.

"The trend in our industry is that we really want to be sustainable," adds David Lattan, vice president for engineering at Prairie Farms. He sees the Farm Smart program as helping to "give us a great chance to reach the industry-wide goal of reducing our carbon footprint by 25 percent by the year 2020."

The pilot program was one of the first ever conducted in animal agriculture to measure environmental impacts across the entire supply chain. The findings contributed to broader Farm Smart pilot and testing efforts across the country that measured the environmental footprint from the production of 370 million gallons of milk — or 1.6 percent of total U.S. milk production.

The effort marked the first time McDonald's has participated in a U.S. dairy sustainability pilot program. "Dairy industry sustainability efforts are extremely important to McDonald's," says Susan Forsell, the company's vice president for sustainability. "Our customers want to know where food comes from and to know that it is responsibly produced."

Customers need data

Prairie Farms was not only willing to help a key customer, like McDonald's, by gathering data it needs to show that its suppliers are committed to sustainability, but also to "test the Farm Smart tools in a real world environment," says Lattan.

"The pilot fostered a deep sense of partnership," says Chad Frahm, Dairy Management Inc.'s senior vice president for sustainability. "Farmers had a first-hand opportunity to learn about emerging sustainable supply expectations from McDonald's. Staff at McDonald's had the opportunity to visit a working dairy farm, meet with farmers and see how milk is produced. These interactions fostered a sense of shared commitment for providing a quality, sustainable product to customers."

The pilot, he continues, showed that a collaborative approach can achieve real progress toward meeting mutual sustainability goals, and to avoid "negative trade-offs for another part of the supply chain. All play a vital a role in reducing the industry's environmental footprint."

The Innovation Center team is continuing to refine the tools and is incorporating expanded capabilities to meet the evolving needs of dairy buyers, dairy cooperatives and U.S. dairy farmers.

In addition to Prairie Farms and McDonald's, other Dairy Sustainability Alliance member organizations that have contributed to Farm Smart tool development include: Agri-Mark/Cabot Creamery Cooperative; Dairy Farmers of America Inc.; General Mills; Land O'Lakes Inc.; Maryland & Virginia Milk Producers Cooperative Association Inc.; Michigan Milk Producers Association; Starbucks Coffee and United Dairymen of Arizona. ■



National Milk Producers Federation celebrates 100 years of service to dairy farmers, co-ops

Editor's Note: The following is adapted from a book celebrating the 100th anniversary of the founding of the National Milk Producers Federation in 1916. The full book is posted at: www.nmpf.org/nmpfcentennial-booklet.



Multiple forces led to the formation of the National Milk Producers Federation (Federation) a century

ago, but it is hardly surprising that a major factor was a crisis in milk prices. By 1916, retail milk prices in cities had hovered for several years between 7 and 9 cents per quart. Any attempt to raise prices was met with public outcry.

The cost to produce milk often exceeded what the farmer was paid, and increases in distribution costs were routinely taken out of the farmer's share. Urban milk dealers — called the milk trust — simply refused to bargain with a growing number of dairy farmer cooperatives.

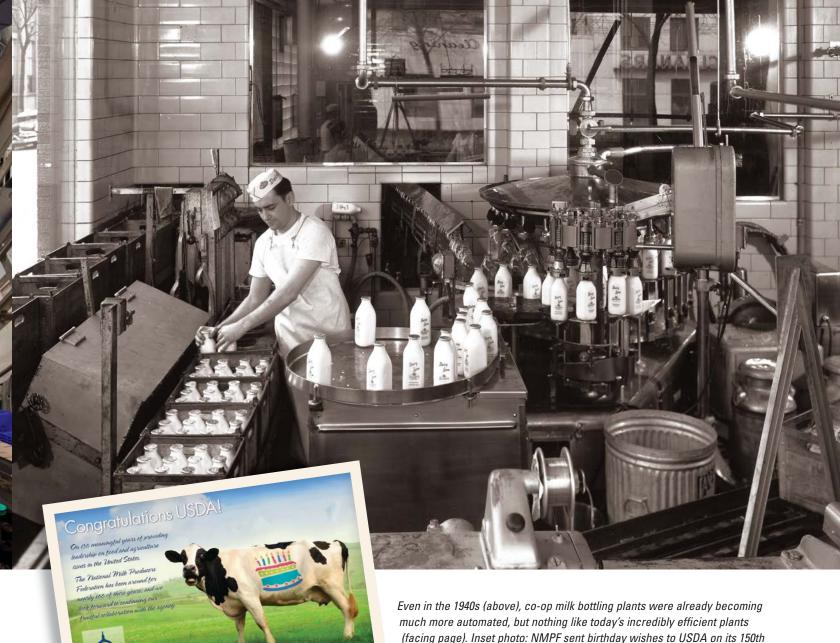
In response, the cooperatives withheld milk. Some of these milk strikes succeeded in raising prices, while others didn't. But they all gave voice to the sentiment that farmers deserved a fair price for their milk and some say in

what they were paid. They also highlighted a related problem: Most dairy farmers worked in isolation and were unaware of the prices paid to their peers in other areas.

The solution? A national organization to serve as a clearinghouse for price information and represent the interests of dairy farmers before government.

Organization arises from market turmoil

Amid this turmoil, in December 1916, about 700 dairy leaders from around the country gathered in Chicago



as part of a national farm financing conference. The conference's organizer — a young former journalist named Charles Holman — was intrigued by the idea of a national dairy farmer organization. By the time the conference adjourned, a constitution and bylaws for the National Milk Producers Federation had been drawn up and the group's first officers named. The next year, the organization was formally incorporated under Illinois state law.

An early Federation victory was the enactment of the Capper-Volstead Act. Along with other farm groups, the

Federation wanted a clear exemption from antitrust laws so that cooperatives could sell their members' products collectively. An initial antitrust exemption bill in 1919 went nowhere. But in 1921, a revised version sailed through the House of Representatives and the Senate. It was signed into law Feb. 18, 1922.

anniversary.

The Federation went on to defend the interests of dairy farmers for 100 years. Highlights of these efforts included the following:

■ It joined with other farm groups to secure passage of the Packers and Stockyards Act and the 1926 law — the Cooperative Marketing Act — that directed the Agriculture Department to support farmer cooperatives.

- It fought for tariffs and duties on imported dairy products and repeatedly challenged the marketing of oleomargarine and other imitation dairy foods.
- It helped create and expand the National School Lunch Program, as well as other federal child and adult nutrition programs.
- Organizationally, it fostered creation of the National Council of Farmer Cooperatives in the 1920s, sponsored the first National Dairy

Month in 1938 and spurred the formation of the American Dairy Association in 1940.

- In the 1980s, it convinced Congress to create the mandatory national dairy check-off, which funds promotion efforts that include Dairy Management Inc. and the U.S. Dairy Export Council.
- In recent years, the Federation has fought for dairy-friendly policies in areas including immigration, trade, the environment and food safety. It also leads the dairy industry in opposing efforts to make raw milk more accessible to consumers, stressing the health risks associated with consuming milk that has not been pasteurized.
- In 2009, it created a groundbreaking, humane animal-care program, Farmers Assuring Responsible Management (FARM), which now covers 90 percent of the nation's milk supply. In 2013, it took over management of the iconic REAL® Seal, the red-and-white milk drop symbol that distinguishes between real

and imitation dairy products.

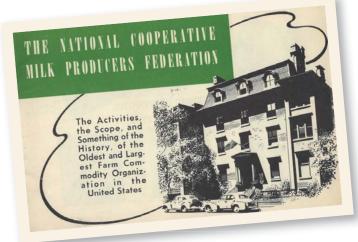
Stabilizing milk prices

The one constant in the Federation's mission through the decades has been the need to stabilize farm-level milk prices. These efforts began in the aftermath of World War I, when demand for dairy products plummeted and the cost of fertilizer, fuel and farm machinery rose. That led to a decadeslong farm depression that fed into the Great Depression.

In the 1920s, the Federation initially opposed, but later supported, legislation to shore up plunging farm prices by having the government lend money to cooperatives to purchase surplus commodities. It opposed key parts of the Agricultural Adjustment Act of 1933, which authorized

payments to farmers to cut production, but it fought for a provision allowing government-enforced classified pricing systems.

Voluntary price agreements between city milk dealers and cooperatives had been in place for years. Dealers paid a higher price for beverage milk, called Class I, to cover transportation costs and to comply with more rigid sanitation standards. Milk used to make butter and cheese received a lower Class II price. But this pricing







- 1916 National Milk Producers Federation is founded in Chicago;
- 1922 Capper-Volstead Act marks an early Federation victory;
- 1923 Federation adds cooperatives representing manufacturing plants to its membership;
- 1929 Passage of the Agricultural Marketing Act of 1929 provides money to cooperatives to buy surplus farm products;
- 1933 Agricultural Adjustment Act authorizes dairy import quotas and payments to farmers to cut production; government begins purchasing dairy products for school lunches;
- 1937 Agricultural Marketing Agreement Act provides the basis for modern Milk Marketing Orders; milk distribution begins to the needy in selected cities;
- 1941 Agriculture Department launches the first widespread dairy product purchases aimed at supporting farm milk prices;
- 1943 Office of Price Administration rations butter, cheese and canned milk; it also imposes milk subsidies, despite Federation objections;
- 1949 Agricultural Act of 1949 makes price support purchases the cornerstone of federal dairy policy;
- 1965 With Federation support, Congress enacts the Class I Base Plan to curb overproduction;



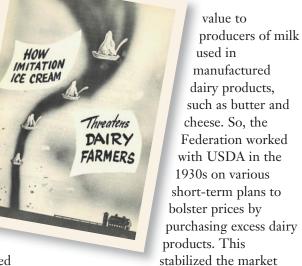
NMPF produced this flyer to warn members of a key market issue.

system broke down with the start of the Great Depression.

Not all milk dealers signed the new the government-enforced classified pricing agreements, authorized in the 1933 act. So, the Federation pushed Congress to pass the Agricultural Marketing Agreement Act of 1937.

It replaced the federally licensed agreements with a federally executed Milk Marketing Order Program. Cooperatives would propose the terms of a marketing order to USDA, which would then publish a planned order after a public hearing. Producers would vote on whether to accept the order. The new program helped boost beverage milk prices, and by 1940 was generating an extra \$56 million annually for dairy farmers.

But marketing orders were of little



until the start of World War II, when the problem became encouraging enough milk production to meet the country's needs.

Rise of price supports

The initial federal response to milk shortages was to again purchase dairy products, this time to increase prices and spur production. This marked the first widespread effort to support the price of milk by purchasing dairy products. In 1941, Congress passed the Steagall Amendment, setting the price support level at 85 percent of parity for milk and other commodities experiencing wartime shortages.

High demand for milk and dairy products in the immediate postwar period resulted in relatively good prices. But by 1949, a drop in demand caused prices to plummet. Government purchases were again the key to maintaining prices. Under the landmark Agricultural Act of 1949, USDA began purchasing dairy products annually at levels that would bring producers a return between 75 and 90 percent of parity.

From then on, setting the annual price support level became a major Federation concern. In 1954 and 1956, the Federation appealed to Congress to increase the support level set by USDA.

In 1956, the Federation succeeded on Capitol Hill only to see legislation increasing the support level vetoed by President Dwight Eisenhower. In 1957, Agriculture Secretary Ezra Taft Benson

- 1971 Class I Base Plan fails to significantly curb overproduction; Federation forms a committee to develop a supply-management program;
- 1972 Federation defeats a plan to end requirement of milk with every school meal;
- 1977 Federation convinces Congress to increase the minimum price support level to 80 percent of parity and adjust the support price twice a year;
- **1981** Farm bill freezes the dairy support price, effectively abandoning parity; levies a 50-cent per hundredweight assessment on farmers if government dairy purchases exceed 5 billion pounds;
- 1985 Congress enacts the Federation-proposed whole-herd buyout, ultimately removing 1.5 million dairy cows from production;
- **1989** Aided by 100,000 petition signatures, the Federation convinces Congress to block a further reduction in the support price and to boost the price instead;
- 1994 First big food biotechnology debate is sparked following U.S. Food and Drug Administration (FDA) approval of recombinant bovine somatotropin for use in dairy cows;
- 1999 Federation wins the first of a series of extensions that continue dairy price supports until 2012;
- **2003** Federation launches Cooperatives Working Together, a self-help program to bolster farm milk prices through herd reductions, compensation for reducing output, and export assistance;
- **2009** With the economy reeling, Federation works with Congress and the Obama Administration on multiple actions to shore up milk prices;
- 2014 Federation's margin insurance program is enacted, marking the most significant rewrite of federal dairy policy in more than a generation.



Current logo



'80s logo

proposed allowing supports as low as 60 percent of parity, but a year later USDA offered dairy products for sale at not less than 90 percent of parity.

It was hardly an ideal situation. The Federation proposed that the dairy industry set its own support level, paid for by a fee on producers. But it would be decades before anything approaching this "self-help" concept became a reality.

In the meantime, the problem of milk surpluses — and the cost to government of the price support program — grew larger. Various efforts to bring costs under control had limited success until the Federation, in





Above: NMPF leaders deliver bags of petitions to the Capitol in 1989, protesting planned cuts in milk price supports. From left are CEO Jim Barr, Chairman Tom Camerlo and Jim Mulhern, then the director of government relations. Left: Producer-delegates quiz a panel of dairy industry experts during the "town hall" meeting at a NMPF annual meeting.

1983, convinced Congress to pay producers \$10 per hundredweight to reduce production.

Under that plan, milk production was reduced by more than 9 billion pounds. Still, dairy price supports were targeted for extinction in 1985.

The Federation countered with a plan to drastically reduce milk production by eliminating whole herds of dairy cows. Farmers would dispose of their herds in return for government payments. An assessment on all milk

marketed would partially offset the costs.

Enacted as part of the 1985 Farm Bill,

this whole-herd buyout removed 1.5 million dairy cows from production, reducing milk output by 10 percent. Government purchases of dairy products and price support costs were cut in half.

New approach emerges

The 1990s marked the beginning of a prolonged period of wild swings in milk prices. In response, Congress in 1996 slated all price supports to end. The Federation won 12-month

extensions of the program in 1999, 2000 and 2001, and then a 10-year reprieve in 2002.

In 2003, the Federation launched Cooperatives Working Together (CWT), a producer-funded self-help program unique in U.S. agriculture. Dairy farmers agreed to voluntarily invest money to support separate programs focused on herd reductions and export assistance. By 2005, more than 40 dairy cooperatives and several hundred individual farmers were CWT members.

In 2008, the worst recession in 70 years caused milk prices to plummet, just as livestock feed costs soared. A

continued on page 37



Congressional Co-op Business Caucus formed

Editor's note: the following article was provided by NCBA CLUSA.



NCBA CLUSA has announced that the U.S. House of Representatives Committee on House Administration has accepted the registration of the bipartisan Congressional Cooperative Business Caucus for the 114th

Congress. Co-chaired by Rep. Ed Royce of California and Rep. Mark Pocan of Wisconsin, the caucus is tasked to promote the cooperative business model as a viable market solution and policy option to help solve today's public policy challenges. The caucus will also serve to educate and inform policymakers on those issues before Congress, the Administration and the broader public.

"We are thrilled by the formation of this historic caucus dedicated to advancing the role of cooperatives in the nation's economy at the federal level," says Judy Ziewacz, CEO and president of NCBA CLUSA. "We worked hard on behalf of our members and co-ops across the country to secure this caucus as an outlet for raising awareness of and advancing the cooperative business model."

NCBA CLUSA formally launched the Congressional Cooperative Business Conference in January at the kickoff event for its 100th anniversary at the National Press Club in Washington, D.C.

The caucus is a tangible result of last year's "Hike the Hill" effort during NCBA CLUSA's first advocacy-themed Annual Cooperatives Conference. During meetings with more than one-third of the Senate, NCBA CLUSA members and supporters asked lawmakers to support a cross-sector Congressional platform that would unite coops around their shared values and objectives.

Since then, NCBA CLUSA has worked with lawmakers to identify the scope and purpose of the Congressional

Cooperative Business Caucus. Its key responsibilities are to:

- Provide opportunities and platforms to host leading cooperative experts and model practitioners to speak and demonstrate how their work advances the mission and goals of the caucus.
- Provide opportunities to connect like-minded and influential policymakers to leading cooperative experts and model practitioners.
- Organize occasional media announcements and events during pivotal times in the policy process to ensure that the caucus' voice is heard and reflected in those discussions.
- Work to establish periods of recognition and/or awards that recognize the importance and leadership in the advancement of cooperative business.

The caucus comes during a time when NCBA CLUSA is making strides to advance the cooperative agenda at the federal level. In October 2015, the U.S. Department of Agriculture held the first meeting of the Interagency Working Group on Cooperative Development – a provision NCBA CLUSA worked hard to ensure the inclusion of in the Farm Bill. In May 2016, NCBA CLUSA will host its second annual advocacy-themed Annual Cooperatives Conference.

"Going forward, this caucus will drive a significant portion of our advocacy work at NCBA CLUSA," says Alan Knapp, NCBA CLUSA's vice president for advocacy. "The caucus will provide greater visibility, education and awareness of cooperative businesses among our federal policymakers and will work to demonstrate the impact those businesses have on our nation's economy."

The caucus' role dovetails with NCBA CLUSA's wider objective, which is to convene and unify the cooperative sectors together around the common purpose of promoting the central goals, values and ideals of the cooperative business model, Knapp adds. ■

In The Spotlight

Dennis Bolling: President & CEO (retired) United Producers Inc.

For nearly 40 years, Dennis Bolling has been a champion of the co-op business model and visionary cooperative educator. He began his cooperative career in 1980 at the Louisville Bank of Cooperatives, a predecessor to

CoBank. One of his accounts was Producers Livestock Association, the organization that later became United Producers Inc. (UPI), an Ohio-based livestock marketing, finance and member-services cooperative. He would later lead the co-op, helping it to recover from severe financial trials and going on to oversee mergers and expansions that would double the size of the co-op. UPI today is the nation's largest livestock marketing co-op, serving about 45,000 members in the Midwest. He retired at the end of 2015.

Bolling recently shared his thoughts with James Wadsworth, education program leader for USDA Cooperative Programs.

Question: Given your 26-plus years of leadership and management with United Producers, what are the most important "lessons learned" that you could share with new managers of farmer cooperatives?

Dennis Bolling: I use the analogy of a three-dimensional chess board — you always have to be looking down the road and in multiple directions, all at the same time. Always have a "Plan B" and do all with patience.

Q. What were your favorite aspects of your job at United Producers?

Bolling: It sounds like a cliché, but clearly the people you work with become lifelong friends as well as co-workers, employees, etc. Equally important is the reward of serving farmers. I often describe needing a missionary zeal to work for a co-op, but the impact is personally very rewarding.

- **Q.** What were your least favorite aspects of your job? **Bolling:** For many people, me included, being patient is hard to do in practice, but is very necessary in management.
- **Q.** What are the keys to success for an agricultural cooperative?

Bolling: Same as for any business: financial performance. But in a co-op, you have to balance the needs of members

with profitability, which is not always compatible.

- **Q.** What are the major challenges of leading a cooperative? **Bolling:** Competing in a non-co-op industry is challenging. We intentionally do things with, and for, our members that add costs that many of our competitors don't incur. Beyond that, our challenges are the same as for any business.
- Q. What were your co-op's main avenues of communication with directors and members? Have those changed over the years, and if so, how?

Bolling: Obviously, printed materials and mailings were once the mainstay, but that's certainly not the case anymore. We try to use technology to the fullest extent possible; social media has raised the bar of effective communication, especially for younger members. Our challenge has been the sheer number of members and the geography we cover.

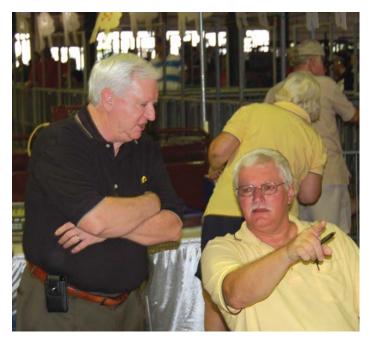
Q. What is the key to establishing a good working relationship between management and the board?

Bolling: Simply, it is building mutual trust. When I first came to our company, I began an executive session with just me and the board, which proved to be a great way to openly and candidly share our respective thoughts on any number

of topics. I've been fortunate to have a high level of trust with our board. We don't surprise each other and, as the old saying goes, you want somebody out on the limb with you.

Q. You recently received the 2015 Reginald J. Cressman award from the Association of Cooperative Educators (ACE), which recognizes "outstanding commitment to cooperative staff development." Is communications even more important for a co-op than for other types of business?

Bolling: Our mission statement says that we intend to serve our members with highly qualified employees. The same is true for their elected leadership. This gives rise to the need for open communication and a commitment to training and development. Learning is a lifelong personal goal. The expression, "when you're through learning, you're really through" rings true for me.



Dennis Bolling (left), a recent Cooperative Hall of Fame inductee, exchanges information during a livestock auction. Photo courtesy United Producers Inc.

Q. You played an instrumental role in developing the regional Mid-America Cooperative Council (MACC) — which includes Illinois, Indiana, Michigan and Ohio — and focuses heavily on co-op education. What was gained through creation of a regional organization vs. separate state organizations? What has been one of its most successful education programs?

Bolling: A regional organization simply has better economies of scale to offer programs. The need for co-op education is great, and there are many opportunities available. MACC has been diligent in providing sessions on basic cooperative principles, board leadership and a specialized session for credit-management employees.

You helped United Producers recover from difficult times, when its future existence seemed to be in question. How were you able to do that?

Bolling: Obviously, given the magnitude of what we experienced, I have reflected on how we survived many times. I think the co-op's survival can be largely attributed to the fact that we always kept the members' best interest at the forefront of every strategy, decision, legal challenge and in our every-day business. I also believe our employees and board were (and remain) focused on serving our members. This focus built confidence to find solutions. Our management team worked hard to contain the legal issues from permeating the day-to-day operations and allowed us to continue to serve our members.

Q. Why did the co-op get involved in offering credit services and risk management to your members? What services do you offer that others don't?

Bolling: Actually, our finance subsidiary was formed about

"In a co-op, you have to balance the needs of members with profitability, which is not always compatible."

the same time as our parent marketing cooperative. Farmers need access to capital and risk management, which are certainly aligned with their marketing needs and strategies. What makes us unique is that we offer these services as a bundle. Most of our competition — in lending, marketing or risk management — only offer one array of services. At UPI, we offer all three, and on a discounted basis, to members who use all three lines of services.

Q. What are your plans for retirement?

Bolling: Most importantly, I plan to spend more time with our grandkids. We have two in Arizona and two in Ohio, so the travel logistics are a little challenging, but a high priority. I also plan to pursue my passion for teaching and will be coordinating UPI's training and development for employees on a part-time basis. I also may be doing some ongoing work with director development.

Legal Corner

California unveils new law to jumpstart worker co-ops

By Sushil Jacob

e-mail: Sushil@cooplawgroup.com

Editor's note: Jacob is an associate at San Francisco-based Tuttle Law Group, which specializes in representing cooperative enterprises. He represents consumer cooperatives, worker-owned cooperatives, Internetbased platform co-ops and business owners who want to transition their business to cooperative ownership. Prior to joining Tuttle, Jacob worked at the East Bay Community Law Center, where he founded the Green-Collar Communities Clinic, a community economic development practice that helps clients who seek to create green, worker-owned businesses.

California is again staking its claim as a national trendsetter, this time with an innovative law aimed to spur creation of worker cooperatives statewide.

New Hope Farms (NHF) is a worker-owned farm in Pinole, Calif., that formed as a California cooperative. NHF's mission is to produce healthy, affordable food, especially for vulnerable communities. NHF has three worker-owners, who operate the farm democratically, on a consensus basis.

The co-op is currently raising sheep, lambs and organic vegetables. The goal is to provide high-quality, organic meats and produce to low-income communities in Oakland and other



cities in the East Bay area. By connecting farming with lowincome urban residents, the co-op is creating connections between rural and urban economic development.

New Hope Farms is not alone. While worker cooperatives have long been recognized as a potent urban development strategy, rural communities around the world are increasingly embracing worker-ownership as an important component of rural economic development. This is because worker cooperatives provide a pathway for creating and preserving rural jobs. In addition, worker cooperatives, like many



Top: These co-owners at Equal Exchange's warehouse in Portland, Ore., are surrounded by stocks of their products, which include fair-trade coffee. Photo courtesy of Equal Exchange. Above: Planning for the future — a board meeting of New Hope Farm, a recently launched workerowned co-op in California. Photo courtesy New Hope Farm

other types of cooperatives, are owned locally, thus providing an essential stabilizing force in the local economy.

One of the largest and most successful worker co-ops is the Mondragon Corporation in the Basque region of Spain. Founded in 1956, Mondragon is actually a consortium of 120 worker cooperatives, employing 80,000 workers in jobs that include high-tech automotive manufacturing, banking and university-level education.

During the 2008 financial crisis, when the rest of the Spanish economy was in turmoil, the Basque region as a whole benefited from the presence of the giant Mondragon as a stabilizing economic factor. The Mondragon Cooperatives have shown that worker cooperatives can be a powerful force in developing long-term economic stability in rural economies.

What are worker cooperatives?

Worker cooperatives are corporations owned by their employeemembers. They leverage the cooperative principles of democratic member control and patronage-based profit sharing into a deeper form of labor participation in the economy. While cooperatives are formalized in the state laws of all 50 states, currently only 12 states have specific laws for worker or employee cooperatives. These states include: Alabama. Connecticut, Delaware, Maine, Massachusetts, New York, Oregon, Vermont, Washington, Pennsylvania, Colorado, and, as of January 2016, California.

The California Worker Cooperative Law borrowed from some of the successes of the Mondragon cooperatives by including "indivisible reserves" as an option for new cooperatives. The indivisible reserve is a restricted part of the co-op's unallocated capital structure; the funds are only available for the ongoing capital needs of the cooperative and are not to be distributed to any members.

The new law also borrows some of

the structural features of the employee cooperative law found in Massachusetts and other Northeastern states. However, California's law has innovative provisions not found in any of the existing state laws - primarily a mechanism for crowdfunding worker cooperatives and the provision for indivisible reserves.

The California law

The California Worker Cooperative Act, AB 816, (referred to as the "Act") amended the existing cooperative law to provide both a legal framework and a pathway for worker cooperatives to raise capital from their community. Governor Jerry Brown signed AB 816 into law in August 2015, and it became effective on Jan. 1, 2016. The author of this article was involved with drafting and passing the law.

Previously, the law governing California cooperatives was called the "Consumer Cooperative Corporation Law," which created confusion as to whether worker cooperatives could use it. AB 816 renamed it the "Cooperative Corporation Law" (referred to here as the "Cooperative Law"), and specified that it applies to both consumer and worker cooperatives.

Major changes made by AB 816

AB 816 changed the existing Cooperative Law in a few important respects for worker cooperatives. It provides a legally enforceable definition of "worker cooperative," provides for collective board governance, allows for patronage to be measured as labor contributed, provides a crowdfunding mechanism and allows for indivisible reserves.

Definition of worker cooperative

The Cooperative Law allows newly forming cooperatives and existing cooperatives to elect worker cooperative status by including a required statement in their articles of incorporation. Worker cooperative status carries the

benefits outlined in this article. The Cooperative Law defines a worker cooperative as a "corporation... that includes a class of worker-members who are natural persons whose patronage consists of labor contributed or other work performed for the corporation."

The Cooperative Law also defines new types of persons: worker, candidate and worker-member. A worker is a natural person who contributes labor or services to a worker cooperative. A candidate is a worker being considered for membership in the cooperative. A worker-member is a natural person who patronizes the cooperative by providing labor, has the right to vote on any matter brought to the members and who has an ownership interest in the cooperative.

The Cooperative Law requires that at least 51 percent of the workers be worker-members or candidates. This provision is meant to ensure the integrity of worker cooperatives by preventing a scenario in which a minority of workers own the company, while the majority do not have ownership or voting rights.

Patronage

The Act expanded the definition of patronage in worker cooperatives to include work performed, measured by wages earned, number of hours worked, or number of jobs created. Previously, the Cooperative Law only allowed patronage to be distributed on the basis of the "volume or value, or both, of a patron's purchases of products from, and use of services furnished by, the corporation, and by products and services provided by the patron to the corporation for marketing."

The reason for including the number of jobs created as a measure of patronage is to allow founders of worker cooperatives to be rewarded for taking the risk to launch the cooperative and provide the opportunity to new workers to become owners. The long-term thinking is that this will incentivize existing members of worker cooperatives to want to create new jobs, because they can have an increased share of patronage earnings based upon this provision. While this is now part of California law, it remains to be seen if the IRS will allow job creation as a valid method of measuring the work performed by each member, which is usually limited to hours worked or wages earned.

Crowdfunding

The Cooperative Law provides a new mechanism to allow worker cooperatives to offer crowdfunding investment campaigns to California residents. Equity crowdfunding is a means of offering investments usually via the Internet — to a large number of potential investors, each of whom will invest a small amount. Successful worker cooperatives, such as Equal Exchange (a fair-trade coffee distributor), have completed crowdbased investment offerings in which they have offered non-voting, nonappreciating shares with target dividend rates to a wide pool of investors.

Other worker cooperatives have registered their offerings with their state regulator and offered investment securities, in what is now being referred to as a "direct public offering." Examples include Cero Co-op (a composting business) and Real Pickles Co-op, both in Massachusetts.

The Cooperative Law creates a mechanism for worker cooperatives to offer investment opportunities to California residents, without undergoing a costly registration process or obtaining a permit from the state. In effect, California worker cooperatives can now do a type of direct public offering. This is because the law creates a new category of investor, a community investor, whom worker cooperatives can solicit for investment purposes.

In California, the Corporate Securities Law of 1958 regulates the offering and sale of securities. The law provides that it is unlawful to offer or sell any security in the state unless it is exempted or qualified by permit. The previous version of the Cooperative Law contained a provision exempting voting memberships or shares in

Cal. Corps. Code § 12253, which defines voting power as "the power to vote for the election of directors at the time any determination of voting power is made and



"Making loaves" at California's Arizmendi Bakery, one of the state's growing number of workerowned cooperatives. Photo by, and courtesy of, Premshree Pillai

cooperatives up to \$300 per member, referred to here as the "co-op securities exemption."

The Worker Cooperative Act increased the aggregate investment amount per member from \$300 to \$1,000, which applies to all California cooperatives, not just worker cooperatives. It also created a new class of investor who could use the co-op securities exemption: the community investor. A "community investor" is an investor in a worker cooperative who is not a worker-member, but solely invests money with the expectation of a limited return.

The California Securities Law requires that in order for an investment to be exempt under the co-op exemption, the member or shareholder must have voting power. Previously, the Cooperative Law defined voting power as the power to vote for the election of directors. (For more details on this, see

does not include the right to vote upon the happening of some condition or event which has not yet occurred. In any case where different classes of memberships are entitled to vote as separate classes for different members of the board, the determination of percentage of voting power shall be made on the basis of the percentage of the total number of authorized directors which the memberships in question (whether of one or more classes) have the power to elect in an election at which all memberships then entitled to vote for the election of any directors are voted.")

The Worker Co-op Act added a special definition of "voting power" for community investors. A community investor's voting power must be provided in the articles or bylaws, and it is limited to approval rights only over the following major decisions: merger, sale of major assets, reorganization or dissolution. The Act specifies that approval rights "shall not include the

right to propose any action." Therefore, a worker co-op may not give community investors governance rights in the co-op, such as the right to vote for the board or to vote on matters concerning the day-to-day operations of the business.

Rather, voting rights for community investors must be limited to approval rights only over the decisions enumerated above. Approval rights do not include the right to propose any

Indivisible reserves

Indivisible reserves are an important part of the cooperative capital structure that can help to ensure the long-term commitment of cooperatives and prevent demutualization and hostile takeovers. The indivisible reserve is a part of the co-op's unallocated capital structure; the crucial difference is that the funds are only available for the ongoing capital needs of the cooperative and are not to be

that policy in the U.S. — except, for exempt farmers cooperatives prior to the 1951 Revenue Act.

The California Worker Cooperative Act sought to build upon the experience of the Mondragon Cooperatives, which have credited part of their long-term stability with investing generously into indivisible reserve accounts. The Act provides an optional mechanism for creating an indivisible reserve account. According to the Act, funds allocated to

California's law has innovative provisions not found in any existing state laws — primarily a mechanism for crowdfunding worker co-ops and a provision for indivisible reserves.

decisions, which is the exclusive preserve of the worker-member class.

By creating a governance system in which community investors have approval rights over major change of control and change of entity decisions, the Cooperative Law provides a pathway for worker cooperatives to bring in capital investment from their local communities, while balancing their need to maintain control of the cooperative in the hands of the workermembers.

Capital accounts

The Act borrowed language from the Massachusetts Employee Cooperative Law that specifies a system of capital accounts. Similar to the Massachusetts law, the Act allows a worker cooperative to create a system of capital accounts, in which the cooperative's entire net book value is reflected in member capital accounts and an unallocated account.

The unallocated account reflects any paid-in capital net losses, and retained net earnings not allocated to individual members. Earnings assigned to the unallocated account may be used for any and all corporate purposes.

distributed to any members.

Upon dissolution of a co-op, the funds are distributed to an organization serving cooperative development or education purposes. In its November/December 2015 issue, this magazine included an article, For Services, Not for Sale, that discussed the need for indivisible reserves accounts to ensure the long-term viability of the cooperative movement. As that article stated, creating an unallocated account that is indivisible is a powerful disincentive to dissolving or demutualizing the cooperative.

The reason for this is that the reserves are not available to investors "who would otherwise regard it as adding to the enterprise value of a coop to be targeted for acquisition," thereby reducing its attractiveness and also the pressure to sell the business that current members may face. In this way, they can be a powerful mechanism for ensuring that cooperatives will continue to anchor the local economy of many rural communities.

While Quebec and several Western European countries' tax codes provide that amounts in indivisible reserve accounts are subject to low-taxation, or not taxed at all, we have yet to achieve

the account shall be used as a capital account for the cooperative, and upon dissolution, the indivisible reserves account shall be allocated to a cooperative development organization designated in the co-op's articles or bylaws.

Jumpstarting worker co-ops statewide

The new co-op law is leading to increased interest in worker cooperatives in California. This author has made presentations on the Cooperative Law to trade groups and will also speak on the topic at the statewide cooperative conference this year.

Many organizations are interested in the law because of the provisions described above, which are targeted both at easing capital formation for worker cooperatives by allowing community members to invest in them, and by ensuring the long-term commitment of cooperatives by allowing the creation of indivisible reserve accounts. We are excited to see other states follow California's lead, thereby acknowledging the potential for worker cooperatives as both an urban and rural local economic development strategy.

Uncertainty Managing Through Control Through Through

Examining the strategic response of U.S. pork co-ops to ag industrialization may offer lessons for future

By Julie A. Hogeland, Agricultural Economist **USDA** Cooperative Programs e-mail: julie.hogeland@wdc.usda.gov

Editor's note: By examining how threats to the industry position of farmers and their co-ops can be managed, this article is an extension of Hogeland's report, "Managing Uncertainty and Expectations: the Strategic Response of U.S. Agricultural Cooperatives to Agricultural Industrialization." It appeared in the "Journal of Cooperative Organization and Management," Volume 3, Issue 2, December, 2015, Pages 60-71. http:// www.sciencedirect.com/science/journal/2213297X/open-access. The views expressed in this article are the author's own, and do not necessarily reflect those of USDA.

Economics has been defined as decisionmaking under uncertainty. Recent fluctuation in global financial markets led a panel of cooperative leaders to identify uncertainty as the primary managerial difficulty

cooperatives will face in the future (C-FARE survey, 2011). This article draws on the 20th century encounter of pork cooperatives (and, to a lesser extent, grain co-ops) with industrialized agriculture for insights into how prolonged uncertainty, lack of control and an inability to predict the future have previously shaped cooperative strategy.

Strategic management research suggests that when the environment is highly uncertain and unpredictable, organizations will increase their efforts to establish the illusion or reality of control and stability over future organizational outcomes (Oliver, 1991: 170). Offering

possible lessons for the future, this article explores how cooperatives interpreted industrial transformation for producer-members through the agrarian framework of values initiated by founding father Thomas Jefferson.

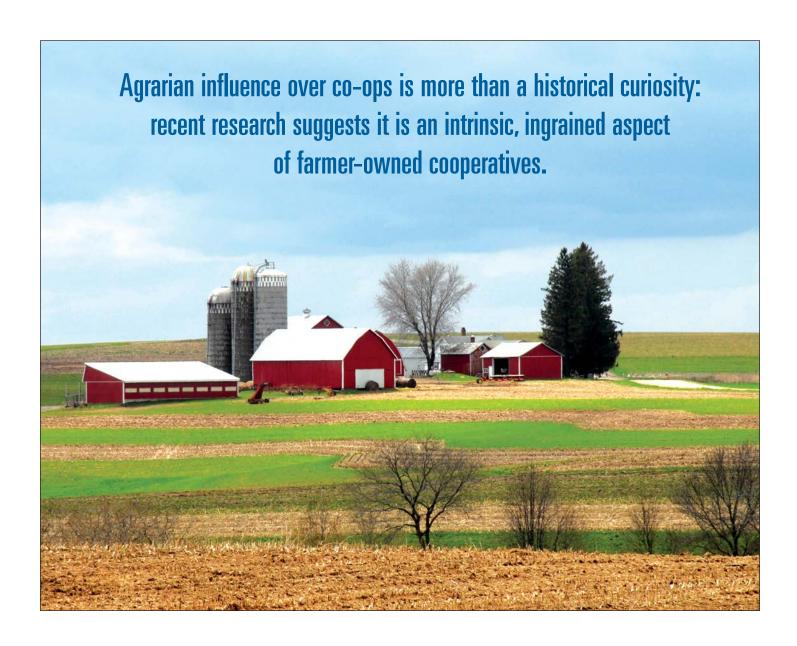
Agrarian ideology placed family farmers at the pinnacle of American agriculture. However, industrialization challenged the primacy of family farming and open markets with a new order based on factory farming and corporate-led vertical integration. Bypassing both farmers and markets, industrialized agriculture threw into question certain aspects of agriculture that cooperatives and members held sacrosanct.

Economists have begun studying how organizational outcomes can be affected by the beliefs inherent in everyday speaking and writing. Common, everyday expressions offer clues to the values and priorities uppermost in people's minds.

In the aftermath of two world wars, the United States was clearly the best-fed nation in the world. Common post-war comments such as "farmers kept us alive" and "farmers saved democracy" were both true and agrarian-inspired. By assuring family farmers of their importance, agrarian ideology offered a bulwark against the uncertainties associated with an event neither initiated, nor driven, by cooperatives.

This study continues that line of inquiry by considering how a dominant ideology, agrarianism, produced words and associations that, for most of the 20th century, arguably had a deterministic effect on farmer and cooperative perceptions of the future.

Out-of-date, incorrect or overstated beliefs can take on a life of their own as they percolate through institutions. Ultimately, incorrect or overstated beliefs may hamper the



effectiveness of institutions in reducing uncertainty and in being a source of reliable expectations regarding interpersonal behavior (Haase, Roedenbeck and Sollner, 2007).

Agrarian ideology's influence on cooperatives

Key agrarian beliefs include the premise that agriculture is the most basic institution in the economy since all of society depends on farmer-produced food and fiber. Farmer choice is an integral component of agrarianism: those who want to farm should be free to do so (Tweeten, 2003). Similarly, farmers should be free to be their own boss by determining the "what, when, where, why and how" of production and marketing. In short, agrarian ideology was a decentralized,

farmer-driven, bottom-up model of development.

Agrarian stress on decentralization was the polar opposite of the overarching control over production and marketing sought by industrialized agriculture through vertical integration. Such control offered the prospect of market expansion by identifying and fulfilling consumers' unmet preferences. Industrialized agriculture combined production and marketing into a system driven by managerial capitalism, the belief that a firm's industry prominence and leadership depended on managerial foresight and skill (Chandler, 1990).

The question was, would farmers or managers determine the 'rules of the game'? Or, as agrarians asked, "Who will control U.S. agriculture?"

It is safe to assume that, more than any other agricultural

institution, cooperatives regard family farming as the cornerstone of the nation's economy and values. To some degree, probably all U.S. agricultural co-ops are influenced by agrarian values. Like all ideologies, agrarianism represents views which tend to be strongly held.

Such views, and the goals they represent, can become accepted, expected and, therefore, "normalized" as "the way things are done around here." However, if agrarian influences are not brought out into the open by being clearly articulated

styles of thinking and acting in a manner that is hard to escape. Another definition, equally appropriate, sees lock-in as a possible consequence of how organizations choose among alternatives such as competing technologies.

Suppose one technology is technically better than another but is culturally (or legally) problematic to a degree which increases switching costs (the costs of adoption). Under these circumstances, the question is whether and how organizations are able to reduce the cultural barriers to adoption to become

Complicating cooperative reaction to industrialization was the fear that once all farming was done by corporations, family farmers would disappear.

and identified as co-op objectives, cooperative transparency will be jeopardized.

Transparency is important because agrarian influence over cooperatives is more than a historical curiosity: recent research suggests it is an intrinsic, ingrained aspect of farmerowned cooperatives. In 2002, agrarian influence over cooperatives became evident to management scholars studying rural cooperatives. They concluded that "co-ops have historically sought to reinforce the traditions and values of agrarianism through education and social interventions. Indeed, for many members these normative goals of a co-op have been preeminent" (Foreman and Whetten, 2002:623).

Researchers observed that cooperatives were pulled in different directions by two conflicting sets of values: family and ideology vs. economic rationality, profit maximization and self-interest. Combined, they can produce an internal tension that suggests that cooperatives are two organizations trying to be one.

Studies have concluded that organizations pursuing a single objective have a greater probability of success than do multi-focal organizations. The latter can be regarded as hybrids. There are consequences to hybridity: many members of a hybrid organization will identify with both aspects of its dual identity and thus find themselves embracing competing goals and concerns associated with distinctly different identity elements. This complicates organizational commitment and performance assessment: how do members know which priority has precedence?

Risk of 'lock-in'

Twentieth century cooperative commitment to agrarian goals and values risked an ideological and institutional "lockin." Lock-in has been defined as getting stuck with traditional more efficient. This was the problem facing cooperatives.

The attributes of industrialized agriculture — a low cost, efficiency orientation, scale economies, specialization, market orientation and reliance on data-driven productivity — were revolutionary in their implications for the organization and management of production agriculture. Mid-century consumers lobbied for cheap food; industrialized agriculture provided it. As the 20th century progressed, it became clear that industrialization represented a superior technology or institution which was competing with the dominant, suboptimal (less cost-effective) institution of open markets.

By the 1970s, progress had been made reducing the health issues associated with large animals under confinement. As industrialization moved closer to transforming Midwestern pork production and marketing (a cooperative strength), cooperatives had to choose between retaining their emphasis on open, competitive markets and developing a cooperative variant of industrialization. According to Woerdman (2004), decisions like this typically depend on:

- The extent to which open markets were satisfactory (problem-solving) institutions for price discovery and market clearing;
- The extent of "incomplete information" facing co-ops that were considering adopting industrialized methods;
- The cost of switching to industrialized methods.

Industrialization's cultural challenges

Complicating cooperative reaction to industrialization was the fear that once all farming was done by corporations, family farmers would disappear (Breimyer, 1995; Kirkendall, 1991). These factors arguably contributed to a strong but

inflexible organizational culture within agrarian-influenced cooperatives. If family farmers no longer existed, there would be no need for farmer-owned cooperatives.

Cultures can be considered strong if "norms and values are



As industrialization moved closer to transforming Midwestern pork production and marketing (a cooperative strength), cooperatives had to choose between retaining their emphasis on open, competitive markets and developing a cooperative variant of industrialization.

widely shared and intensely held throughout the organization" (Sorensen, 2002: 72). Such normative consistency reduces and contains the anxiety of dealing with an unpredictable and uncertain environment (Sorensen, 2002: 73).

Threats to organizational survival can either free resources to move in new directions or encourage firms to stick with familiar processes. However, cooperative adjustment to industrialization was prolonged, in large part, because agrarian ideology reinforced or elevated family farmer importance and requirements to a degree that became culturally difficult for farmer-owned cooperatives to challenge.

Another complication was the unprecedented technical and scientific demands of industrialized agriculture. Developing strategy is easier when technological change represents a natural progression or refinement of an existing technique, such as the evolution from in-person auctions to electronic markets. When a leap to a completely different process is involved, such as the consumer shift from beta to VHS video tape, technical change is considered discontinuous.

Discontinuous technological change is an example of what economist Joseph Schumpeter called capitalism's "creative destruction." Although discontinuous technical change is

typically labeled a "breakthrough," it often creates new "winners" and "losers" in the marketplace. Short of shifting to the new technology, there is no simple response when technological change is discontinuous.

Discontinuity presents an even greater challenge when incumbent firms have strong incentives to reinvest in their current market positions and not in the new technology. Agrarian ideology supplied this rationale, encapsulated in the term "serfdom."

Some see industrialization leading to "serfdom"

Industrialization challenged the ability of cooperatives to define and sustain a social order encompassing family farmers, open competitive markets and marketing cooperatives. Cooperative economist Edwin Nourse recognized this as early as 1922 when he saw emerging within agriculture market power so centralized and hierarchical that it seemed feudal.

Subsequently, the metaphor of "serfdom" was used by some to suggest how industrialization's contract production could reduce entrepreneurial and independent farmers to the equivalent of hired hands — so-called "piece wage labor."

Could cooperatives restore producer independence? The answer was inherent in the one adjustment to industrialization open to all cooperatives: how they related to producer-members. Arguably, cooperatives personalized the connection between cooperative and farmer-member to position themselves, in a manner of speaking, as the exact opposite of serfdom: cooperatives are like a family, specifically, a family business.

The basis for this conclusion comes from interviews with some 30 local and regional cooperative managers in 2004 (Hogeland, 2004). Asked how they typically related to producer-members, managers identified the following

- Being altruistic, not exploiting the business for a profit;
- Emphasizing service over making money;
- Valuing the "small and personal" over the "large and impersonal;"
- Displaying an unwillingness to let go of relationships, things, or places;
- Allowing a cooperative to assume risk on behalf of producers;
- Attaining cooperative self-sufficiency to minimize farmer dependency on those perceived as outsiders;
- Preferring to subordinate individual goals to the good of the whole; and
- Valuing equality; treating everyone equally.

These behaviors suggest a "one for all and all for one" attitude characteristic of the way family members relate to one another. And, in fact, co-op manager observations suggest that the boundaries between cooperative and farm were at times blurred, allowing cooperatives to be seen more as a lenient parent than as businesses subject to market constraints.

Recent research on family-owned businesses suggest that they communicate via informal structures which are not necessarily explicit (Roessl, 2005). The "cooperatives are like a family business" metaphor suggests that a tacit social contract (based on agrarian language and assumptions) exists informally between cooperatives and members. This social contract is probably a response to the continuous and severe attrition among family farmers during the 20th century.

In the 1930s, farmers were some 30 percent of the population. By the end of the century, they were only about 2 percent of the population. Since cooperatives could not exist without family farmers, it is likely that this social contract was skewed more toward farmer than cooperative survival.

Producer priorities

Producers wanted to survive.

Nevertheless, the number of bids livestock producers received was steadily declining. A 1987 survey indicated producers uniformly reported receiving one bid less than they had received five years earlier (Hogeland, 1988). Particularly troubling was that producers who reported attracting two or three bids in the past now received only one or two. It was evident that, by the 1980s, open markets were beginning to create more problems than they solved.

However, local competitive markets that are by design tightly aligned with one environment do not have sufficient flexibility or resources to overcome discontinuities (the type of technological leap associated with industrialization). Left to themselves, incumbent firms will focus on averting loss and preserving current resources by continuing to invest in the older technology. For this reason, discontinuous technical change can encourage firms to seek industry leadership and cohesiveness (Gilbert, 2009).

In 1993, USDA's Rural Business Cooperative Service surveyed local cooperative members of five Midwest regional cooperatives — Countrymark, GROWMARK, Farmland Industries, Harvest States and Land O'Lakes (Hogeland, 1995). The survey covered how locals were adjusting to changes in the pork industry, how they were helping producer-members adjust, and the support or services local co-ops needed from regional co-ops.

The response rate was 34 percent, representing 670 local co-ops. Results from these locally owned grain and farm supply cooperatives indicated locals urgently wanted greater direction and leadership from their regional co-ops.

Yet, debate over cooperatives' future role was complicated by the massive structural changes overtaking the industry. In overhauling production and marketing as they had been known, the pork industry was assuming characteristics of a completely new (or emerging) industry, notably, a high degree of uncertainty. No single production technology,

breed or production facility (pork building) had been sufficiently proven to become the industry standard.

Despite this uncertainty, cooperative involvement was motivated by the belief that members would be worse off if integration forced formerly independent family farmers to become contract growers subject to anonymous corporate authority. Further, the uncertainty characteristic of emerging industries gave cooperatives reason to believe that modernizing and upgrading the facilities and techniques of small producers in particular might allow them to hang on, if not survive and prosper.

The advantages of vertical integration were particularly evident in pork production. Hogs were systematically moved from one stage of production to another according to their biological requirements. For example, feeder pigs progressed from the nursery to grow-out to finishing to market-ready hogs. Each stage was accompanied by specific feeding regimens and potential housing adjustments. Further, consistent genetics meant that the hogs were predictably lean with standardized pork cuts.

Open competitive markets did not foster such consistency because producers were free to choose when and where to market. Farmers might risk commodity deterioration by waiting for markets to improve. Producer willingness to buy genetics from farmer-breeders further contributed to product inconsistency.

Reversing lock-in

Lock-in can be reversed to become institutional "break out," especially when "traditional firms possessing...large financial means commit themselves to the development of this [superior] trajectory" (Woerdman, 2004:75). Accordingly, regional cooperatives Land O'Lakes, Farmland Industries and Countrymark Inc. developed cooperative variations of a "pork system" that replicated key advantages of integration, such as standardized genetics, pork buildings and technical support.

These systems included a market element: regional cooperatives relied on locally owned cooperatives to market feed and feeder pigs to pork producers, efforts that were complemented by collectively owned slaughter and processing plants.

The pork system developed by Land O'Lakes included a floor price in the member contract. By shifting risk from producers to the cooperative, the floor price can be regarded as an expression that "cooperatives are like a family business."

Significant cooperative involvement continued until, at the end of 1998, a temporary shortage of industry slaughter capacity caused hog prices to plummet to 16.5 cents per pound. The break-even price was 36-40 cents per pound. Integrated systems are vulnerable to bottlenecks causing interruption in the continuous flow process from farm to slaughter. The crisis was sufficiently severe to trigger a shakeout of independent producers from the industry.

However, the floor price in the Land O'Lakes member contract shielded members from the full impact of the price collapse. Nevertheless, losses of \$26 million ultimately led the cooperative to transition out of providing a floor price. By 2005, the cooperative had sold its pork operations.

In retrospect, under conditions of uncertainty, a "break-

reflected farmers' belief that they would be victimized by industrialization's restrictive production contracts.

"Cooperatives are like a family business" reflected the efforts of cooperative managers to compensate by upholding the dignity and independence of farmer-owners. However, "when a superior alternative exists but is barely known among those who choose, other inputs are beliefs and

The question was, would farmers or managers determine the 'rules of the game'? Or, as agrarians asked, 'Who will control U.S. agriculture'?

out" from older, less effective technology has to be considered a trial effort or experiment. For example, the late 20th century pork industry had not yet reached a consensus on such basic and critical matters as the best breeds or facility layout. Nevertheless, although experimentation is inherently risky, it can provide feedback that allows cooperatives to move beyond outdated technology and values.

By the late 20th century, if not earlier, open markets had evolved into a technological dead end. By developing a cooperative version of industrialization based on contracting — the embodiment of modern marketing — co-ops offset the power of a "serfdom" business model and evaded both institutional and ideological lock-in.

Reducing switching costs is the key to organizational transformation. This requires leaders who can recognize when the old culture has become counterproductive and who can envision, and impose, a new culture (Schoenberger, 1997). Land O'Lakes, Farmland and Countrymark rose to this challenge. While Farmland filed for bankruptcy in 2002, this was primarily due to its position in the volatile fertilizer market; its pork and beef operations were very successful, and were sold for strong prices after the co-op failed.

By the end of the 20th century, farm lenders began demanding that producers have a contract in hand specifying market destination before facility financing could be discussed.

Metaphors shed light on farmer perceptions

Metaphors such as "serfdom" and "cooperatives are like a family business" are important because they show how agrarian-influenced cooperatives and farmers represented the world to themselves, as well as how they perceived the conditions for action in that context. The term "serfdom"

expectations shaped by both personal and collective experiences and culture" (Woerdman, 2004:66).

For most of the 20th century, the pejorative term "serfdom" substituted for direct cooperative and producer experience with industrialization. Cooperatives were guided by agrarian ideology's emphasis on (or "privileging" of) producer decision-making authority based on multiple choices. All industrialized agriculture seemed to portend was serfdom.

While dramatic metaphors can command audience attention, there's a risk in their use: researchers have argued that "great theories in social science attain their status not because they are true, but because they are interesting, and engage the attention of their audience of experts and practitioners" (Ferraro, Pfeffer and Sutton, 2003:5).

"Serfdom" was a disaster metaphor intended to provoke urgency and action. But what kind of action? By themselves, metaphors do not indicate what actions should be taken and when (Nerlich & Halliday, 2007: 51).

Nourse's prescription for combating potential loss of producer independence was the normative concept of cooperatives as "competitive yardsticks," first iterated in 1922 (Nourse, 1922). By 1945, he had expanded it into the argument that cooperatives should intervene in thinly traded markets to restore farmer choice through an "extra bid," as the yardstick concept was popularly called (Nourse, 1945).

The concept of cooperatives as "competitive yardsticks" was intended to ensure farmer survival by restoring market choices precluded by monopoly. Such choice was essential to the agrarian concept of family farmers as independent and entrepreneurial. From a pragmatic standpoint, the competitive yardstick norm arguably gave small producers (in particular) hope that cooperatives could be counted on to resolve their market difficulties.

Industrialized agriculture sought to streamline marketing and reduce transaction costs by having product go directly to the end user. Industrialization brought the consumer into the agricultural equation, emphasizing how direct marketing in effect, one bid — could improve freshness and nutrient retention.

Nevertheless, a particularly problematic aspect of the cooperative response to industrialization was cooperative willingness to assume risk on behalf of producer members. It is possible that cooperatives interpreted "cooperatives are like a family business" to include the distributive justice Nourse (1922) counted as a producer prerogative. If so, then cooperatives likely tried to ensure that producer-members would receive the return they were implicitly or explicitly promised.

In retrospect, the efforts of cooperatives to protect producer-members' independence put them under extraordinary moral and financial pressure.

Was producer independence lost?

Under conditions of uncertainty, expectations can be misleading or wrong and thus lead to misallocated resources and investment. Consequently, an important question for cooperative scholars and policymakers is: "Did serfdom occur?"

By 1981, USDA economists noted how industries of small, scattered, independent producers selling through open markets became the basis for highly concentrated, integrated and industrialized agricultural subsectors (Reimund, Martin, & Moore, 1981: 3). They concluded that industrialization disproportionately affected the small producers who represented the majority within the first subsectors to industrialize – broilers, fed cattle and processing vegetables.

Initially, these growers used farm diversification as a risk management strategy. Products were sold in local markets; producers could easily enter or exit production. Within 20 years (1954-1974), economists observed that industrialized ag's greater capital resources could increase productivity, while processors gained managerial and decision control through grower production contracts. Conditions of exit and entry became more difficult for growers (Reimund et al., 1981: iv).

However, fieldwork conducted by anthropologist Ronald Rich (2010) in the Midwestern pork industry from 1998 to 2001 suggests that the producer "serfdom" anticipated by agrarians was self-contained, not universal. Because contractors must supervise many growers with many animals, they cannot fully monitor grower behavior. The contracting relationship is vulnerable to moral hazard where incorrect or unauthorized grower actions may not be clearly evident. Consequently, contractors who exploit growers risk a counterproductive backlash capable of raising costs and

decreasing profitability.

Although both contractors and growers recognize the potential for inequality and conflict in their relationship, Rich concluded that trust, honesty and personal integrity are more associated with contracting than conflict. Of 27 contract operations he studied, 20 were farm based, following existing lines of friendship, neighborhood, work and kinship. These close and natural associations allow Midwestern family farmers, contractors and growers alike, to manage their participation in an "exploitative agriculture development more generally" (Rich, 2010:109).

Rich's ethnographic findings present a solid economic basis for contract hog producers to be an integral part of decision-making. The negotiated context of pork production, especially among the farm-based contract operations Rich studied, exists "in part, as a result of the frail quality of industrial hogs; contractors are reliant on contractees to raise a distinctly fragile commodity that requires immediate attention to biological issues (health) and infrastructure (barn conditions)" (Rich, personal communication, May, 2013).

Conclusions

Cultural change is a slow process which can take years, even decades. It is likely that the metaphor of serfdom, and agrarian ideology in general, fostered such preconceived notions of industrialization that benefits were largely inconceivable. As Professor A. Allan Schmid says, "We see what we have a language to see" (2004:267).

For decades, agrarian-inspired disaster motifs such as "serfdom," "straightjacket" and "feudalism" seemed to have limited cooperatives' ability to see themselves as resilient, able to foster new institutional designs within industrialization's complexity.

Because cooperatives sometimes appear to have been "on the sidelines looking in," they were susceptible to ideological blinders limiting their ability to see industrialization as a mix (from their standpoint) of both positive and negative aspects. This suggests that cooperatives should assess future agricultural developments carefully before rejecting them.

Most cooperative scholars would probably agree that little empirical work has been done to assess the evolutionary dynamics of collective strategies. This article considers how threats — such as the prospect of serfdom and discontinuous technical change — prompted innovative collective action in the industrializing pork industry. Future research might consider to what degree threats — to legitimacy, to market position, etc. — have spurred collective action in other industries and contexts.

For a full list of references, contact the author at: Julie.Hogeland@wdc.usda.gov. ■

Newsline

Co-op developments, coast to coast

Send co-op news items to: dan.campbell@wdc.USDA.gov

Farmers Cooperative Co. merging with West Central Cooperative

Members of Farmers Cooperative Company (FC), Ames, Iowa, and West Central Cooperative, Ralston, Iowa, in December approved a merger of the two co-ops, effective April 1. The unified cooperative, to be known as Landus Cooperative, will be led by current West Central President and CEO Milan Kucerak and will be headquartered in Ames, Iowa.

"This merger showcases our members' request for their cooperative to do more together for their operations than either business could do separately," says Kucerak. "Our members were presented with a rare opportunity to combine two strong, financially stable cooperatives in a merger of equals to maintain local ownership for generations to come," adds West Central Board Chair Sue Tronchetti, a Paton, Iowa-area farmer. The board of directors will be made up of nine directors from each cooperative.

Together, West Central and FC have more than 70 grain, agronomy and feed locations in 26 Iowa and three Minnesota counties. According to World Grain magazine, Landus Cooperative will become the seventh largest grain company in North America, based on storage capacity. It will have shuttleloading access on all seven major Iowa rail lines.

"We are confident that together, we will become an even stronger cooperative and be better positioned to help improve the economic well-being of our member-owners," adds FC Chief Executive Officer Jim Chism.

To approve a merger, Iowa law



Cement silos are part of an expansion at West Central's SoyPlus plant. As of April 1, West Central, Ralston, Iowa, and Farmers Cooperative Co.. Ames, Iowa, are merging. Photo courtesy West Central.

requires at least 50 percent of each membership (plus one) to vote, with two-thirds of those casting ballots voting in favor of the merger.

In related news, a major expansion of West Central cooperative's SoyPlus manufacturing plant is underway in Ralston, Iowa, with completion of the work expected this fall. The \$27 million dollar project broke ground in June 2015 and is scheduled for completion

The addition of a line of mechanical presses, soybean, soybean oil, and finished product storage and load-out access is expected to increase current production by 50 percent. The expansion will allow an additional 20

million bushels of soybeans to be processed annually.

The project has created 11 full-time jobs.

Judy Ziewacz to lead NCBA CLUSA

After a brief stint as interim president and CEO, Judy Ziewacz has been awarded those positions full time by the board of the National Cooperative Business Association (NCBA CLUSA). Ziewacz took on the role of interim president and CEO in October of 2015, during which time the board says she provided outstanding leadership. This came at an important time in the organization's history as it

celebrates 100 years of supporting cooperatives that build a better world.

"Judy's leadership over the past four months has been collaborative, focused and re-energizing to the organization and its mission," says Andrew Jacob, NCBA CLUSA chairman. "On behalf of the entire board of directors, we welcome Judy and share in her vision to continue to expand and grow the organization's support of cooperative business both domestically and internationally.

A lifelong cooperator, Ziewacz brings a unique perspective to the organization and is able to draw on a lifetime of cooperative history to effectively lead the organization. "It is a privilege to once again serve NCBA CLUSA and the broader cooperative community, pivoting its purpose into the next 100 years," says Ziewacz.

CoBank earnings rise 4 percent; record patronage of \$514 million paid

CoBank, Denver, Colo., has reported net income of \$936.7 million for fiscal 2015, up 4 percent from 2014. The increase was driven primarily by higher net interest income and lower net losses on debt extinguishments. CoBank is a cooperative bank that serves agribusinesses, rural infrastructure providers and Farm Credit associations (which are also co-ops) throughout the United States.



Net interest income increased 3 percent, to \$1.3 billion, driven by higher average loan volume. Average loan volume rose 8 percent, to \$83.1 billion.

The bank will distribute a record \$514 million in 2015 patronage to its borrowers. That represents more than half of the bank's earnings for the year. Patronage will include \$416 million in cash and \$98.1 million in common stock.

For most customers, that will represent 100 basis points of average qualifying loan volume during the past year, effectively lowering their overall net cost of debt capital from CoBank.

"By virtually any financial measure, the year 2015 was one of exceptional performance for CoBank," says Robert B. Engel, CoBank's CEO. "The bank recorded its 16th consecutive year of growth in profitability, an accomplishment unlikely matched by any other financial institution in the world. Loan volume and profitability reached all-time highs, and credit quality, liquidity and capital levels remained very strong. Most importantly, we continued to serve our customers and fulfill our mission, delivering dependable credit and financial services to vital rural industries."

CoBank saw higher loan volume from customers in a variety of industries, including agricultural cooperatives, food and agribusiness companies, electric distribution cooperatives, power supply customers and communications service providers. Wholesale lending to affiliated Farm Credit associations also increased, due to growth in market share and greater borrowing from their agricultural producer customers.

Despite CoBank's strong performance in 2015, Engle says the bank continues to face a number of challenges, including intense competition from other banks and lenders. Other challenges include the need for significant investment in people, processes and technologies to improve the customer experience, as well as continued low interest rates that negatively impact returns on invested capital.

"In spite of these headwinds," Engle says, "our cooperative structure ensures that we remain aligned with, and focused on, the needs of our customers

— as both customers and shareholders - and on building the financial and operational capacity of the bank for the long term.

CHS Foundation's **William Nelson retires**



William Nelson, vice president of CHS Inc.'s Corporate Citizenship and president of the CHS Foundation, retired March 1.

"During William's more than two decades with CHS, he has led the growth of our stewardship activities, focusing on opportunities that positively impact CHS and its owners," says Linda Tank, senior vice president of CHS communications and public affairs. "He has helped put CHS at the forefront of agriculture safety and the development of next-generation agricultural and rural leaders through partnerships with universities and colleges, our unique cooperative education grants designed to help tell the cooperative story, and FFA's National Teach Ag initiative."

Nelson helped develop the co-op's New Leader Forum for next-generation producers and also contributed to the growth and development of successful CHS employee volunteerism programs

in support of the cooperative's commitment to stewardship in the communities in which it does business. He also served numerous roles with external CHS partners, building strong relationships with universities, associations and the cooperative community.

Among his current positions are the National Council of Farmer Cooperatives' Executive Education Committee, the National Cooperative Business Association board of directors and the Agricultural Safety and Health Council of America Board.

Nelson joined CHS in 1992 after serving 13 years as a University of Minnesota faculty member and administrator. He has been awarded FFA's Honorary American Farmer Degree and in 2015 was inducted into the Cooperative Hall of Fame.

CHS will conduct a search for a successor in the coming months.

Oregon Cherry Growers buys Bell Foods' cherry operations

Oregon Cherry Growers Inc., Salem, Ore., has acquired the cherry operation of Bell Foods International, based in Gervais, Ore., according to press reports. Oregon Cherry is a growerowned cooperative owned by 60 family farms in the Willamette Valley and the Columbia River Gorge. The co-op is the largest grower-processor of sweet cherries in the world and produces dried fruit, canned cherries, and fresh cherries. It operates processing plants in Salem and The Dalles, Ore.

The co-op says the purchase is part of its overall growth strategy. Bell Foods will continue to produce and copack several non-cherry products, and company president Craig Bell will serve as an advisor to the co-op.

"Acquiring the cherry operations of Bell Foods International supports our effort to supply our customers with the highest quality maraschino cherries made with locally grown fruit," says Tim Ramsey, the co-op's president and CEO.

Oregon Cherry Growers' roots go back to 1932, when it was formed as a grower-owned farm cooperative. "What began with only 700 trees has evolved across generations of dedicated growers into a worldwide supplier of sweet cherries, blueberries and many other fruit products," the co-op says on its website.

Agri-Mark to expand production at New York cheese plant

Agri-Mark Inc. will invest nearly \$30 million to expand its cheese



Agri-Mark is investing \$30 million to expand production at its plant in Franklin County, N.Y. Photo courtesy Agri-Mark

manufacturing facility in Franklin County, N.Y. "Agri-Mark's investment to expand and modernize the Chateaugay facility is a win-win for the upstate [New York] economy," says Howard Zemsky, CEO and commissioner of Empire State Development, which is also supporting the project. "The expansion will retain over 100 jobs, allowing for the continued support of Agri-Mark's 600 New York dairy farms."

The expansion and restoration of Agri-Mark's Chateaugay facility involves rebuilding the current 110,600-square-foot manufacturing facility, re-engineering the layout of the facility and purchasing new machinery. The co-op bought the plant in 2003 after it was closed by the former owner.

Agri-Mark has since invested

millions of dollars in the facility as it has expanded production of cheese for the farmer-owned McCadam and Cabot dairy brands. The co-op markets milk produced by its 1,100 regional dairy farms. It is one of the largest milk suppliers in the Northeast.

Empire State Development will provide up to \$6 million for the project from the state's Economic Transformation Program (ETP). The ETP was allocated \$32 million in the 2014-15 state budget to support economic development and provide tax credits for projects that create jobs in

> communities affected by the closure of state correctional and juvenile justice facilities.

"This joint investment by the Agri-Mark cooperative and the state of New York is very good news for the North Country region, our dairy farmers and the hard-working employees who turn out award-winning products at the Chateaugay facility," says New York Senator Betty Little. In

2015, Agri-Mark marketed more than 336 million gallons of milk. During the past five years, it has returned more than \$150 million in year-end profits and milk quality and other premiums to its co-op member farms.

Co-op Boot Camp coming to Ohio

This year's Ohio Cooperative Forum will feature the 5th Annual Cooperative Business Boot Camp. The event will be held April 28 in Akron at the Fairlawn Hilton.

The forum will cover both beginner topics and more advanced topics for those further along the road with their cooperative businesses. The forum is being supported, in part, with a Rural Cooperative Development Grant from USDA Rural Development.

Forum topics will include:

- The ABCs of cooperatives;
- Starting a cooperative business;
- Business planning;

• Financing a cooperative, and more. In addition, there is a track of breakout sessions on topics of interest to cooperators attending the 30th Annual Ohio Employee Ownership Conference, to be held on April 29. Topics will include selling an existing business to the employees through formation of a worker cooperative.

For more information, contact Roy Messing or Chris Cooper at oeoc@kent.edu or (330) 672-3028.

Virginia to host Home Care **Co-op Conference in September**

Home care worker cooperative members and developers from across the country will gather Sept. 12-14 in Dulles, Va., at the inaugural Home Care Cooperative Conference. The conference is organized by the Cooperative Development Foundation (CDF) and will be hosted at the headquarters of the National Rural Utilities Cooperative Finance Corporation.

In addition to providing important networking opportunities, conference topics will include:

- Economies of scale through collaboration and joint services;
- Growth opportunities: markets and models;
- Increasing revenue through new services:
- The economics of the home care industry;
- Communicating the benefits of cooperative membership.

While key to keeping seniors and the disabled out of nursing homes and hospitals, home care providers are some of the lowest paid workers in the United States. The cooperative model empowers workers and enhances working conditions. The goal of this conference is to help existing and nascent cooperatives think in terms of systems and collaborations that can improve wages and job satisfaction, as well as client care.

Through a USDA Rural Cooperative Development grant and support from

the MSC (Mutual Service Cooperative) Fund and other organizations, the CDF will cover expenses related to travel, lodging and lost wages for home care providers to participate in the conference.

For additional information, contact Leslie Mead at lmead@cdf.coop or 202-383-5456, or visit the CDF website: http://www.cdf.coop.

Kaiser acquires Seattle's **Group Health Co-op**

Members of Group Health Cooperative, Seattle, Wash., have voted to approve their co-op's acquisition by Kaiser Permanente, a health-care provider based in California. The vote was 8,824 in favor of the deal, to 1,585 opposed, according to Associated Press (AP). The proposal needed the approval by two-thirds of the co-op's members.

Group Health's unions and doctors also supported the acquisition of the 70-year-old cooperative. During the next 10 years, Kaiser plans to invest \$1 billion in Group Health's clinics and medical equipment, according to AP. It will also invest \$800 million in various health-oriented community programs.

NCB real estate loans hit \$1.1 billion in 2015

National Cooperative Bank (NCB), which is committed to serving cooperatives nationwide, reports nearly \$1.1 billion in real estate lending during 2015. The bank arranged more than \$694 million in financing for housing communities, \$185 million in new loans for 807 individual unit owners and \$177 million for other commercial real estate projects across the country.

"2015 was another great year for NCB. It provided more than \$1 billion in financing to the commercial and residential real estate industry nationwide," says Casey Fannon, executive vice president of NCB. "The New York cooperative housing market, in particular, was one of the most active sectors."

NCB also committed \$290 million to

initiatives serving low- to moderateincome communities and new cooperative development during 2015. The capital was provided through direct lending, investments and the facilitation of creative transactions in the following impact sectors.

Record net earnings for Land O'Lakes

Land O' Lakes Inc. in March announced record net earnings of \$308 million for fiscal 2015, up from \$266 million in 2014. Net sales for the year were \$13 billion.

"Delivering record earnings in the current market environment underscores the strength of Land O'Lakes' core business strategy," says Chris Policinski, the co-op's president and CEO. The record was set despite "challenging commodity markets, declining on-farm income and increasing industry consolidation."

Other highlights for the year included completing the largest merger in the co-op's history — merging United Suppliers Inc.'s crop protection and seed business with the co-op's Winfield Solutions LLC - and extending the co-op's global reach to Africa for the first time, he notes. The latter occurred when Land O'Lakes purchased majority ownership of Villa Crop Protection, based in South Africa.

Policinski says the co-op's 2015 balance sheet is "the strongest in its 94year history." Land O' Lakes returned \$161 million to its members in 2015, marking the seventh consecutive year that cash patronage to members has exceeded \$100 million.

The co-op's Dairy Foods Division reported 2015 net sales of \$4 billion, which was down from 2014. But pre-tax earnings of \$83.1 million were up from \$39.7 million. This reflects a one-time gain on the sale of Land O'Lakes' 35percent interest in Advanced Food Products LLC. Growth in butter. branded cheese, foodservice and refrigerated desserts helped to offset declines in milk powder and overall

Worker Co-op Conference July 29-31 in Austin

More than 400 participants are expected for the National Worker Cooperative Conference July 29-July 31 in Austin, Texas. The conference will help worker cooperatives in all stages, from concept, to conversion to growth. Lenders/funders, educators and businesses supporting the cooperative economy will also be in attendance. International guests will share their wisdom, experiences and perspectives on worker co-ops.

The conference focus will include the sharing of best practices, identifying emerging trends, and forming relationships with allied organizations, businesses and economic developers. Worker cooperatives are businesses owned and controlled by the people who work in them, the cooperative members. For more information, visit: https:// usworker.coop/events-trainings.



The Austin skyline backdrops a memorial to blues-rock musician Stevie Ray Vaughan.

commodity markets.

Crop Input Division sales of \$4.8 billion were down slightly from 2014, as were pre-tax earnings of \$189.6 million. Low commodity prices impacted results across the portfolio. These declines were offset, to some extent, through strength in the co-op's CROPLAN corn, soybean and alfalfa

Feed Division sales of \$4.2 billion were down from 2014, but pre-tax earnings of \$57.8 million were up from \$27.8 million in 2014. The core, Purina-brand feed lines delivered record-setting performance, with growth in all customer channels. The co-op launched PMI Nutritional Additives, a new segment of the business focused on products that optimize nutrient utilization.

Land O'Lakes completed the divestiture of its commodity egg business, operated through Moark LLC, which contributed pre-tax earnings of \$13 million.

The co-op's complete 2015 financial results can be read at: www.landolakesinc.com.



Legacy of Leadership continued from page 18

crushing cost-price squeeze put thousands of dairy farmers out of business and saddled thousands more with debts that would take years to pay off.

The Federation convinced USDA to temporarily increase the support price for nonfat dry milk and to distribute 200 million pounds of dairy products for hunger relief. It also worked with Congress to enact a \$350-million emergency aid package.

For the longer term, the Federation - after extensive consultation with its

members — unveiled Foundation for the Future, a plan to end price supports and focus instead on insuring producer margins. The proposal was introduced as the Dairy Security Act in time for the 2012 Farm Bill debate.

Federal payments to producers would be triggered when margins were squeezed. To counter steep or prolonged price declines, a standby supply-management program would encourage farmers to temporarily reduce production by not paying them for a small fraction of their milk.

Debate over the 2012 Farm Bill continued for more than a year. When the dust settled in early 2014, the Federation-designed Margin Protection Program was enacted, minus standby production controls. It was the most

significant rewrite of federal dairy policy in more than a generation and the culmination of five years of Federation work. More than half of U.S. dairy operations signed up in the first enrollment and the first payments under the new program were made in 2015.

None of these efforts would have been possible without the help of NMPF's producer, cooperative and associate members. Together, they determine and carry out the organization's programs and policies. Member involvement has sustained the organization through 100 years, and the continued involvement of its members will ensure the Federation thrives in the 21st century. ■

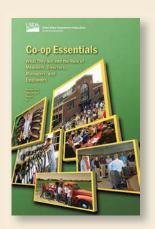
Now available from USDA

To order: USDA co-op publications are *free*, and available both in hard copy and on the Internet, unless "Web only" is indicated.



Co-ops 101: An Introduction to Cooperatives (CIR 55)

Probably the most widely read co-op primer in the nation, this report provides a bird's-eye view of the cooperative way of organizing and operating a business. Now in an attractive new, full-color format. Ideal for classroom use and member organization meetings.



Co-op Essentials (CIR 11)

A companion volume to Co-ops 101, this is an educational guide that teaches further basic information about cooperatives. It explains what cooperatives are, including their organizational and structural traits. It examines co-op business principles and the responsibilities and roles of cooperative members, directors, managers and employees.



How to Start a Cooperative (CIR 7)

This long-time favorite has been freshened with updated editorial content and a new design. This guide outlines the process of organizing a cooperative business, including the necessary steps involved in taking the co-op from idea to launching pad.



Organizations Serving Cooperatives (July-Aug. '15 magazine)

This special issue of USDA's Rural Cooperatives magazine includes complete contact information for nearly 150 organizations that provide services to cooperatives, with detailed overviews of 52 of the larger organizations. Listings include co-op financial institutions, trade/legislative groups, co-op development and co-op education organizations, among others. A limited number of these back issues are still available.



Cooperative Statistics 2014 (SR-78)

Provides a vital window on the agricultural cooperative economy, based on a survey of 2,186 U.S. farmer, rancher and fishery cooperatives during calendar year 2014. It shows another record year for ag co-op business volume and net income (before taxes). It also includes a wealth of information about financial ratios and other performance data that co-ops can use as a yardstick to examine their own performance.



Farmer, Rancher, and Fishery
Cooperative Historical Statistics (CIR 1)
Section 26 (in three volumes) Web only
USDA began its survey of ag co-ops in 1913,
when it counted 5,424 cooperatives with
\$636 million in sales and about 651,000
members. The 2014 survey shows 2,106 coops with sales of \$244.5 billion and 2.1
million members. Historical co-op statistics
have been compiled in three volumes: 19131950; 1951-1999; and 2000-2012. Also
available in Excel format. Available at:
www.rd.usda.gov/ publications/
publications-cooperatives

For hard copies: Please include the publication title and number, as well as the quantity needed. Send e-mail to: coopinfo@wdc.usda.gov, or call (202) 720-7395.

Send mail requests to: USDA Co-op Info., Stop 3254, 1400 Independence Ave. SW, Washington, D.C. 20250.

To download from the Web: Visit www.rd.usda.gov/publications/publications-cooperatives.



The Nature of the Cooperative (CIR 65)

These collected articles, written by USDA ag economist Charles Ling, were originally printed in Rural Cooperatives magazine to examine the nature of cooperatives and their place in our free-market economy. Now expanded to 10 articles from the original 5. Especially suited to college-level courses that examine the cooperative business model.



Cooperatives in Agribusiness (CIR 5)

Not only provides does this publication provide an overview of the many functions cooperatives play in the agribusiness sector, it also discusses how co-ops are financed, the role of utility and telephone cooperatives and other service co-ops. Ideal for use in in schools, FFA and 4-H.



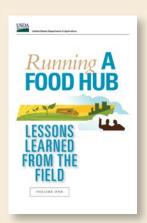
Nominating, Electing and Compensating Cooperatives Directors (CIR 63)

This report examines the various methods co-ops use for nominating board candidates, voting policies and compensation practices for co-op directors. It also includes a look at the types of leadership skills needed by co-op board members. This collection of articles by USDA economist Bruce Reynolds originally appeared in USDA's Rural Cooperatives magazine.



Member Satisfaction with Their Cooperatives (RR 229) (Web Only)

Dairy cooperatives have adopted a wide range of organizational structures. In some cases, this resulted in fairly bureaucratic, complex business organizations that require high levels of management expertise. This study looks at how such organization affects the satisfaction members have with their cooperatives.







Running a Food Hub, Volumes I–III (SR 77)

Three volumes are now available in USDA's "Running a Food Hub" series of booklets. Volume 1, Lessons Learned From the Field, compiles best business practices for starting or expanding a food hub. It includes profiles of about a dozen food hubs. Volume II, A Business Operations Guide, focuses on key operational issues faced by food hubs, including choosing a location and equipment, as well as dealing with transportation and other infrastructure issues. Volume III, Assessing Financial Viability, provides insight into how changes in major costs and revenue affect the overall operations and profitability of food hub businesses.

United States Department of Agriculture Washington, DC 20250

OFFICIAL BUSINESS

Penalty for private use, \$300

NOTICE

- Check here to stop receiving this publication and mail this sheet to the address below.
- NEW ADDRESS. Send mailing label on this page and changes to:

USDA/Rural Business—Cooperative Service Stop 3254 Washington, D. C. 20250-3255 Periodicals Postage Paid U.S. Department of Agriculture

