Biodiversity is the Key, Says Entomologist & Agroecologist
Jonathan Lundgren
by Tom Parker

Dr. Jonathan Lundgren, noted entomologist, agroecologist and former USDA whistleblower on neonicotinoids—the family of pesticides suspected of harming pollinators and other wildlife—minced no words when he presented his keynote presentation at the opening of the Kansas Rural Center’s Sustainable Farm and Food Conference in Manhattan, held on November 18 and 19. Over 200 attended the two-day event featuring speakers, panels and workshops on a wide range of topics.

“Biodiversity is in decline,” Lundgren said. “We are currently experiencing one of the biggest mass extinctions the planet has experienced. We are losing not just species, but entire habitats. We’re losing entire insect communities. We’re losing butterflies, we’re losing bats, we’re losing birds, we’re losing bees, we’re losing terrestrial mammals. This is worse than the dinosaurs, folks.”

As if that weren’t enough, those selfsame extinctions were caused by our own efforts, and the potential outcome, if left unchecked, promised to be catastrophic. “No bees, no plants, no food, no people,” he said. “It’s that simple.”

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Small Farmer Commentary

Our Common Goal of Connection

by Mary Fund

One of my kids’ favorite movies when they were small was “Angels in the Outfield.” It was the story of a couple of baseball loving foster kids, who’d been bounced around foster homes, and a down and out baseball team.

Winning the championship seemed as unlikely to the team as finding a solid family and home was to the kids. But the oft repeated phrase from the littlest kid whenever things seemed most hopeless—“It could happen!”—became the movie’s mantra of hope. Like many Hollywood plot denouements, both the kids and the baseball team succeed and supposedly live happily ever after.

“It could happen!” came to my mind often last year. Not as the oft repeated denial to the election campaign, (as in “It could never happen” and then it did), but in becoming aware of the possibilities in a groundswell of people determined to create the future they want and need.

The common theme that arose throughout KRC’s work last year, and apparent in other events, was people’s need to connect to each other, to find like-minded people working for common goals—in spite of political differences. This stood in contrast to the deep division in the national psyche played out in the election. To paraphrase President Obama’s response to a question about this divide in a recent interview, the conversations we need to be having are about what are our common values and what are we willing to do for them. In Kansas, we see evidence of people beginning these conversations across the state.

“Connect, communicate and act” best described the mood of KRC’s series of public forums around the state last spring and summer as people came together to talk local food, local economies, and meeting the needs of the community. “I did not know so much was going on around Kansas!” was a common statement from attendees at all of the forums, referring to health and wellness groups, local food councils, and marketing and processing cooperative efforts, and emergence of related business and economic opportunities.

“Building Healthy Communities” meaning soil and people communities was the theme of Gail Fuller’s Field School last summer, where about 150 Kansans explored the connections between the extensive networks of soil microbes and mycorrhizal fungi and similar networks in human communities. The message was that we grow healthy communities from the inside out, above and below the soil surface, and thus provide resilience—both in the ecosystem and the human community.

The explosion of local food councils is another example of people connecting across the state. Food is the common denominator connecting people in both urban and rural communities as they address food access for the most vulnerable, ensure healthy school lunches, support local food production, and even consider zoning or environmental protection regulations.

At our fall conference, participants were energized by the speakers and workshops, but most of all by the company. Over 200 attended each day, and many agreed that the networking with others to listen, to learn and to expand their own world views, was the highlight.

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As keynote speaker Liz Carlisle wrote in The Lentil Underground, and underscored in her talk, the success of the Timeless Seed company in Montana, “…much like the components of an ecosystem, could be understood only through its connections.”

The myth of the rugged individual that is part of not just the western myths, but the national one remains strong. But the reality is that what makes us strong is how we connect and how we collaborate. As Carlisle pointed out, just as underneath a healthy crop there is an active soil and microbial community, underneath a healthy business or community there is an active social ecology—a human community.

In Kansas we also made strides forward in electing a moderate state legislative leadership in November. This was only possible because at the grassroots level, people spoke up and demanded leadership that would take action to fix the state revenue crisis.

Most recently in early December, a coalition of organizations came together to propose recommendations for resolving the state revenue crisis. They began the conversation on how we can work our way out of the state’s budget mess.

We close the door on 2016 with a sense of relief. The political campaign that seemed it would never end has ended. We now have a better though not necessarily clearer idea of what lies ahead both nationally and here in Kansas. We know or are learning that regardless of what it is—budget crisis, farm and food challenges, racial and/or gender divides—“We can’t do it alone.”

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Thanks also to our volunteers and KRC board members who helped out with everything from the registration table, technical support and the silent auction!

KRC’s Legislative Policy Watch Weekly E-Updates will begin in January 2017. Watch Your E-mail Inboxes! Available to KRC Friends and contributors. Contact Mary Fund at mfund@kansasruralcenter.org
Our political world and our policy debates are churning. Elections have very real consequences. The national political scene has witnessed a seismic change. The best outcome may be uncertainty while the worst outcome could be the destruction of civil rights, economic stability and the environment.

The political winds in Kansas have shifted back to moderation in Topeka. Uncertainty will play a key role in the relationship of the federal government and its programs to the stability and survival of state governments. The timeline for these fundamental changes is one of the greatest uncertainties.

The federal government has been fundamentally changed with the Republicans now in complete control. ‘Post truth’ politics will be the order of the day as fact and truth becomes less important. The future laid out so far through the president-elect’s appointments and those who will be in charge, points to a “shake up” of sorts at the federal level. But is it the shake up that the people expected, want or need? This is no “draining of the swamp” of long time politicians and Washington insiders to put in place overseers of the public good, but a layering of global corporate and business interests never seen in our history.

What is certain, based on the direction the new administration appears to be taking, is that the wealthiest individuals and corporations that bought this national election will be repaid in full with lucrative tax breaks and the complete elimination of the estate tax.

Corporate tax rates will be cut so that CEO salaries can be increased and company stock bought back instead of increased investments in research and new plant construction. The largest four banks will grow even bigger and financial speculation increases as most banking regulation is eventually repealed. Antitrust enforcement – whether in banking or airlines or telecommunications or meat packing - will be further weakened. Well-paid lobbyists will have their purchased seat at the Congressional table to implement their wish list.

The federal budget will undergo severe change. While tax cuts will drive up the deficit along with increased military spending and infrastructure investments, the discretionary portion of the budget that funds the social safety net and protects the environment will be plundered. The health of the planet will be sacrificed to the short-term profits of the ‘climate change denying’ fossil fuel industry. As the Medicaid program along with food stamps are capped and block granted to the states, the states will have a convenient slush fund to restrict benefits and redirect the funds to their own deficit crises. Clean air and clean water will be a convenient tweet for the President-elect while the actual programs are strangled.

Supporting private and parochial school choice vouchers will come at the expense of public schools that educate 90% of the students. The privatization of Social Security will be handed to Wall Street and Medicare given to the health insurance industry. Private crop insurance will be more lucrative with expanded federal subsidies for the largest farms while conservation programs will be significantly reduced.

Voter suppression will be federalized. Immigration will be tightened but agribusiness will hold on to their indentured immigrants. While the President-elect was vague on many policy and program details, the blueprint has already been written by the Speaker of the U.S. House of Representatives. The only uncertainty is what debate and defiance may occur in the United States Senate—and at the grassroots level once they realize how they have been duped.

While the uncertainty of federal governmental action lingers, the newly elected 2017 Kansas Legislature will face a debilitating deficit of at least $350 million for a fiscal year that ends June 30, 2017. There are 14 new State Senators out of 40, and 45 new House members out of 125.

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Political Uncertainties...
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Most were elected on a platform to straighten out the revenue crisis and write a new school funding formula. There are no instant revenue remedies to fix this fiscal mess. Reinstating the income tax cuts will take close to 18 months. A regressive sales tax increase could be in place by April 1 if passed by February 1.

After 10 rounds of budget cuts since the 2008 recession, state programs are barely performing. K-12 comprises 50% of the State budget in a block grant. KanCare (Medicaid) comprises 20% of the State budget and it already has taken a 4% reduction. Higher education has seen a 30% reduction in state funding since 2009 and it comprises 12% of the State budget.

The Governor has decided to wait till January to offer legislation to balance the State budget and has promised no further layoffs or furloughs. Options to balance the budget are limited. Kansas could securitize the tobacco settlement and sell off a portion for one-time funds. Kansas will continue to move payments for schools, medical providers and KPERS from June 2017 to July 2017 thus creating a larger deficit of $600+ million for fiscal year 2018.

The political tone will be far different in the 2017 Kansas Legislature. The Kansas House will have 40 Democrats (up from 28) and several new moderate Republicans to constitute a working majority on the floor. In the Kansas Senate, the balance is pretty close to 20 conservatives and 20 moderate Republicans and Democrats. There will be a new Speaker and Majority leader in the Kansas House who will determine committee chairmanships and assignments balancing that split of moderates and conservatives. President of the Kansas Senate Senator Susan Wagle will maintain her position but a new Majority leader will be selected. The key agriculture and natural resource committees - Senate Agriculture, Senate Natural Resources and the House Agriculture & Natural Resources - will all have new committee chairs in 2017.

“... Kansas has to get this right to rebalance our broken revenue system and find an equitable funding formula for funding public schools.”

Fixing the budget deficit for 2017 and 2018 by revenue increases or further budget cuts has to be priority one. The two-year school funding block grant ends on June 30 so a new formula has to be written or an extension of the block grant passed.

The Kansas Supreme Court should rule on the ‘adequacy’ of school funding by early spring so that will have to be considered. There is more support for Medicaid expansion but changes at the federal level will impact that discussion. There will be proposals to adequately fund the State Water Plan by dedicating a portion of the sales tax or increasing water use fees.

With so many new lawmakers, new political leadership in both chambers and dire issues of budget and school finance to resolve, there may be limited political oxygen to tackle many other substantive issues. Will the Governor take a position in the Trump administration? Who will fill U.S. Representative Mike Pompeo’s seat as he moves to direct the CIA? Will there be a new Kansas Secretary of State?

What is certain is that Kansas has to get this right to rebalance our broken revenue system and find an equitable formula for funding public schools. It may well take a few years to undo the damage from the ill-fated ‘income tax’ experiment. Raising revenues is never easy especially for first time elected lawmakers.

The wealthiest Kansans - that have significantly benefited from the income tax cuts and funded several campaigns - will have the loudest voice to protect their benefits and force working Kansans to pay more taxes. What leadership will the Governor provide to truly fix the revenue and budget crisis?

Since the tax cuts of 2012 and 2013 were passed solely by Republicans, will the Democrats offer a revenue plan or sit out the debate and force the Republicans to solve this crisis?

Beyond just voting, Kansas residents must stay engaged in these critical decisions. Kansas citizens must offer clear support to lawmakers who vote for a fair, progressive tax system and the restoration of critical budget cuts to education, social services, infrastructure and public safety. The quality of life in Kansas for now and a generation to come will be determined by the courage of our lawmakers and the support they receive from us.

Paul Johnson is KRC’s State Policy Analyst. He can be reached at pdjohnson@centurylink.net.
Lundgren, who has published nearly 100 scientific papers on pollinators and insects, worked at the USDA for 11 years before leaving to start Blue Dasher Farm, a research and demonstration farm in South Dakota. The farm’s mission is to grow nutritious food profitably while conserving both the soil and biodiversity—a mission that only partially succeeded.

“We didn’t make our goal, but we learned more this year about beekeeping and farming than I have in my 20 years as a scientist,” he said. One of the lessons he learned was that there is a disconnect between scientists and farmers that needs to be adjusted.

“Scientists can tell you everything that you should be doing on your farm,” he said. “But at the end of the day, until we have walked a mile in your shoes, a level of credibility needs to be accompanying that scientific advice. We need to pair the science with actual practice. The data doesn’t change behavior. This is a sociological issue as much as a scientific issue.”

A critical lesson he learned was to ask questions, he said. Question the science, question the motive, question the procedure, and above all, question what will be left behind for future generations. “The planet is facing serious challenges right now,” Lundgren said. “The status quo is no longer good enough.”

Worldwide, pollinators and other beneficial insects are losing ground. Currently, 25 percent of North American bee species are at risk of extinction, and in Kansas four out of 11 bee species are at risk, said Jennifer Hopwood, Senior Pollinator Conservation Specialist with the Xerces Society for Invertebrate Conservation, who also gave a presentation. Another 17 percent of butterflies are at risk, including the Monarch, whose population has declined annually for the past 22 years.

In spite of this, everywhere Lundgren goes people tell him that the only good bug is a dead bug. “That kind of thinking,” he said, “is what happens when we put our blinders on.”

Insects are worth $63 billion to the economy, he said. They form the basis of complex food webs, support wildlife, regulate herbivores, and shape the dispersion and density of plant communities. Insects are nature’s pesticides and herbicides. And for every insect pest out there, there are 1,700 beneficial insects, many of which prey on the pest. “We wouldn’t be here without insects,” he said.

Insects are also critical to soil health, he said. Not only do they interact with every type of biological community, they directly affect the physical and chemical properties of soil. In fact, that interaction with soil is so critical that efforts to stop the collapse of bee populations must focus first on soil health. “Anything less than that and you’re going to continue to have dead bees,” he said.

One of the driving forces behind pollinator losses was the prevalent use of pesticides and herbicides containing neonicotinoids. In 2013 virtually all corn planted in the U.S. was treated with neonicotinoids. As of 2014, about one-third of soybean acres used treated seeds. Lundgren showed a map of the Midwest color-coded to plant diversity. Unsurprisingly, the vast majority of the map consisted of three colors denoting cotton, corn and soybeans.

“All of these are being treated with neonicotinoid treatments unnecessarily,” he said. “As biodiversity declines, we see the simplification of our landscape as part of our food production system.”

The more chemicals are used, the more they’re needed, a process he compared to an addiction. That doesn’t mean that chemicals should be demonized, he added. A simplified system still needs input. Farmers need Continued on page 7
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to know what they’re treating their crops with and what long-term effects they might have, and in order for that to happen, he said, scientists need to stand up to special interests and corporate interference.

History shows that scientific research has been spotty regarding the safety of agrochemicals, he said. When DDT was offered after World War II, it was considered safe. Other chemicals followed suit, each with its own undesirable effects. But in the mid-1990s genetically modified organisms (GMOs) came along, triggering a paradigm shift. “It took the decision-making process out of the harvester’s hands and put it into the hands of the seed dealer,” he said. “You no longer had to know what was in your fields. It was insurance. All you had to do is buy a bag of seed and your pests were taken care of. That’s where we are today.” Unfortunately, he said, it doesn’t work now.

“Throughout history, whenever we tried replacing Mother Nature with technology, eventually Mother Nature kicks us,” he said. “We’re using more pesticides than we ever have before. If they worked, we’d have kicked their asses 50 years ago. We’d have won.”

If farmers are just reacting to symptoms of a deeper problem without solving the problem itself, he said, then the only answer is more pesticides and a continuance of the addiction.

The problem isn’t pests, he said, but a lack of diversity and too much disturbance. “If you have a pest problem in your field, it’s because something in your field is out of whack,” he said.

In organic systems, studies have shown that as predator species increase, pest species decrease. Predator diversity also increases. Only by addressing the lack of biodiversity through integrated pest management systems will we get through this, Lundgren said.

Hopwood agreed. Strategies for improving biodiversity can be modest to extreme, but regardless of their scope, all are beneficial. Good sanitation, crop rotation, spraying at night when crops are dry, using agrochemicals that aren’t toxic to honeybees, reducing spray drift whenever possible and establishing buffers or setbacks that aren’t sprayed are all good management practices, she said. “No matter how small, every effort to integrate pollinator management into your life can help,” she said.

Lundgren, who describes himself as neither anti-pesticide nor anti-fertilizer, said that the decline in pollinator species is not a bee problem. Studies have placed the blame on mites, pests, diseases and the outside possibility of pesticide use. “All of these issues are related to one thing, the lack of diversity in our environment,” he said. “If we can get that back, bees can resist a super virus or varroa mites. The bees are telling us something, and we should listen.”

Meanwhile, beekeepers are being told to relocate their hives to prevent chemical contamination, a solution that’s as impractical as it is scientifically unfeasible, and the population continues to decline. Research has shown that neonicotinoids aren’t staying put, that only 20 percent is taken up in the plant and the rest is being dispersed to waterways and untreated plants.

Lundgren’s discussion, “The Importance of Pollinators and Diversified Farming Systems to Farm and Food System Health,” mirrored the conference’s theme of “Transforming Our Farms, Our Food and Our Future: Building the Road As We Go.” Other speakers expanded on this theme with topics such as beekeeping, adding livestock to urban or small scale farms, and spray drift impacts and preventions and more. See presentations on the KRC website at www.kansusruralcenter.org/krc-farm-food-conference-2016-presentations/.

Tom Parker is a freelance writer from Blue Rapids.
Kansas is Broke, and There’s No Plan to Fix It
by Tom Parker

Holliday, Executive Director of the Kansas Center for Economic Growth (KCEG), a nonprofit, nonpartisan organization whose mission is to advance responsible policies by informing public discussion through credible, fact-based materials, shared the podium with Duane Goossen, senior fellow for the organization. At KRC’s annual conference, they spoke on “What Kansas Citizens and the Legislature Will Face in 2017? An overview of the State Budget Crisis” to about 200 attendees. Like the photograph, it wasn’t a pretty picture.

Both Goossen and Holliday were well versed for the task. Before joining the KCEG, Goossen served seven terms as a member of the Kansas House of Representatives and as budget director for 12 years under three governors. After working nearly a decade in public health and community development, Holliday had switched to budget and tax policy last September after realizing that they were at the root of every issue that people cared about.

“It’s abundantly clear that unaffordable and unsustainable tax changes have left us broke, leaving us with this dumpster fire we’re dealing with,” Holliday said. “There are undeniable consequences for the fiscal train wreck that Kansas has seen. Our jobs, our kids and our way of life are dependent upon us changing course—and tax policy changes are at the root of this.”

“Whether you care about agriculture or community development, about healthy eating or active living, whether you care about home care or transportation, budget and tax policy are at the root of those issues,” she said.

Goossen agreed. Governor Sam Brownback’s so-called fiscal experiment has negatively impacted every aspect of life in the state. The budget crisis was triggered by the enactment of a tax cut bill that passed in 2012. Income taxes were cut sharply across the board and business cash-through income was exempted from all tax liabilities. The theory behind the bill was seductive, he said—cutting taxes would generate such robust economic activity that tax money would roll in like a tidal wave to fill the state’s coffers. Not only that, but the effect was supposed to be almost instantaneous.

“Our new pro-growth tax policy will be like a shot of adrenaline into the heart of the Kansas economy,” Governor Brownback stated. “It will pave the way to the creation of tens of thousands of new jobs, bring tens of thousands of people to Kansas, and help make our state the best place in America to start and grow a small business. It will leave more than a billion dollars in the hands of Kansans. An expanding economy and growing population will directly benefit our schools and local governments.”

Unfortunately, the exact opposite happened. In the first year of implementation, income tax revenue dropped $700 million. Since then, the state’s revenue has flat-lined while expenditures exceed income.

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At the end of fiscal year 2016, which ended June 30, the state couldn’t pay about $200 million in bills. Those bills were moved to be paid the following year or, barring that, the year after that. Fiscal year 2017 doesn’t look any better. After paying approved expenditures, the state is expected to be $340 million short of the necessary funds.

Why that happened is something most people can understand, Goossen said. “There is a very simple rule that governs this—money coming in has to be equal to or greater than money going out,” he said. “It’s the same thing that governs our own finances. But therein lies the problem, because the money coming in no longer equals the money going out. A whole swathe of income that Kansas depended upon for the general fund has simply disappeared. It’s gone.”

Efforts to make up for that lost revenue have been creative but, ultimately, only deepened the misery. The state has blown through its reserves and bank accounts, transferred money from the highway fund to the general fund, raised sales taxes and made cuts to higher education and human and health services, and while it narrowed the gap, it didn’t close it, he said. Plus, there were consequences from robbing the highway fund. Planned projects have been scuttled and maintenance on roads and bridges has dwindled, leaving our highway infrastructure vulnerable.

For average Kansas taxpayers, the impact has been disastrous, Holliday said. Kansans earning less than $42,000 annually have seen their taxes increase, and nearly 62 percent of white working adults aged 18 to 64 saw a net tax increase due to the increase in sales tax and the elimination of certain tax cuts that benefited lower-income residents. For blacks and Latinos, that rate was even greater—75 percent and 83 percent, respectively. The real beneficiaries were the state’s wealthiest citizens.

Instead of revenue gains, the state lost more revenue in one year under the tax plan than it did during three years of the Great Recession combined, Holliday said. It went through nine rounds of budget cuts, suffered record-high debt, saw three credit rating downgrades and still can’t pay its bills.

“This isn’t about politics,” Goossen said. “Wise up, Kansas—if the tax plan would have worked, we wouldn’t be talking about this. If we don’t work at this and try to correct the situation, we’ll continue to spiral downward.”

It’s not all doom and gloom, however. Goossen said he’s encouraged in the changes to the Kansas House and Senate after the election, when nearly one-third of the Brownback hardliners were replaced with more moderate lawmakers.

Holliday agreed. “There’s been a broad bipartisan position that the Brownback tax plan didn’t work,” she said. “Someone said that we’re just kicking the can down the road. Well, we can’t afford to kick it down the road anymore.”

“There’s a growing understanding that changes need to be made,” Goossen said. “Ultimately, we have to work very hard to stop the bleeding.

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Coalition Proposes Revenue Fix

On December 7, a coalition of organizations led by the Kansas Center for Economic Growth (KCEG), held a press conference to announce a tax proposal to address the state’s fiscal crisis. Joining KCEG are Ks. Action for Children, Ks. Contractors Association, Ks Organization for State Employees, and Kansas- National Education Association.

The coalition, calling itself “Rise Up Kansas” proposes the following as a starting point to fix the state budget:

* Ends the “March to Zero,” stopping the further phase out of individual income tax rates and preventing future budget crises;
* Re-instates the top income bracket of 6.45% for single filers earning $40,000 a year or more (or $80,00 for married couples);
* Closes the “LLC loophole,” cleaning up the tax code and ensuring it’s not benefiting a select number of Kansans at the expense of the common good;
* Diverts 4/10 of a cent sales tax currently dedicated to the State Highway Fund to the State General Fund for a period of three years while also pairing the sweep with an equivalent increase in the state gas tax of $0.11 per gallon;
* Reduce the state sales tax on food by 1.5 percent, taking the rate from 6.5 percent to five percent.

Net Impact: Generates approximately $820 million for the State General Fund in Fiscal Year 2018 while putting $100 million back into the pockets of Kansas families for groceries.

For more, go to: http://realprosperityks.com/.
movement had softened somewhat since its arrival in Montana during the 1970s.

Not only had the movement evolved beyond its counter-cultural roots, but one of his neighbors, David Oien, was beginning to make a name for himself by growing lentils. His products were showing up on retail shelves and he had recently been mentioned by a rising Montana chef in the pages of Bon Appétit magazine. Plus, he’d seen David Oien’s bumper stickers that read “I 💙 cover crops” and “Real farmers have green manure.”

The state even had its own organic farming organization. So Habets decided to hear what they had to say. Following a meeting, he found himself at the Oien farm, convinced that this was his only recourse.

Dr. Liz Carlisle, a Stanford University lecturer in the School of Earth, Energy and Environmental Sciences, met Habets when writing “The Lentil Underground,” a book on sustainable agriculture in Montana, that grew out of her dissertation research.

Carlisle shared stories of the book’s compilation and her research in her discussion, “The Moral and Social Economy of Alternative Food Systems,” which was presented at the Kansas Rural Center’s Sustainable Farm and Food Conference, held November 18 and 19 in Manhattan.

Carlisle met Habets for an update after her book was published. Drought had struck Conrad again—the worst since the Dust Bowl—but this time Habets was ready. He took Carlisle on a tour of his farm, pointing out the improvements he’d made since converting to organic. “It turned out to be the best thing I ever did,” Habets told her. “I learned to take care of my soil first, and everything followed from that.”

Despite the drought that year, organic farmers had harvested about 80 percent of their annual crop with only about 40 percent of the annual water, Carlisle found. How they managed to build in that kind of resilience remains the focus of her work.

Habets’ story was merely the latest chapter of a narrative Carlisle had listened to since her earliest years, when she sat at her grandmother’s side listening to stories of the Dust Bowl and the Nebraska Sandhills. Other stories came from Carlisle’s short country singing career, opening for such acts as LeAnn Rimes and Sugarland. She told uplifting stories of rural America, of its values and strengths, but found herself listening to stories that sometimes obliterated hers in the dawning realization that farming wasn’t as romantic as she’d thought.

Her growing disillusionment over the plight of family farmers centered on political policy and the economic structure of the food system.

After meeting Montana Senator John Tester, an organic farmer, she quit her singing career and worked in Tester’s offices where she started learning the real story of the Montana farmers and ranchers he served. She returned to graduate school where her research focused on how the alternative food and farm movement had evolved.

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Conrad, Montana, known for its endless, horizon-spanning waves of wheat, was the epicenter of Carlisle’s research. Known as the Golden Triangle, it had once been a diversified farming community in the early 20th century, but during the 1950s farmers were urged to specialize. “You know how it went,” she said. “Too much fertilizer, nitrates in the ground water, wildly fluctuating global wheat markets, high rates of cancer, and all the other associated problems.”

The farm crisis of the 1980s hit the state hard. By the time it had abated, most farmers were forced to either get out of the business or make drastic changes to their farming systems. Carlisle’s farming research partners were either the initiators or the inheritors of the latter group, she said.

The challenges were daunting. The farmers needed to work together to design a system that would replace a monoculture dependent on chemicals but still be sustainable in an arid climate, and they needed to make a living at it. Traditional forms of organic farming, often applied in wetter areas, wouldn’t be practical in Montana, so a new suite of crops had to be determined, crops that were drought tolerant, able to break up pest cycles and include a diverse mix of species to provide nitrogen to the soil.

Trial and error led them to a standard four-year rotation practice, with cover crops the first year, grain the second, a legume the third and buckwheat or flax the fourth. Year three posed a problem, she said. Another round of cover crops would have been more efficient but not economically feasible. They needed a crop that would both feed the soil and be harvestable. Because the climate wouldn’t support soybeans, they looked at places around the world with similar conditions.

“That’s when they found lentils,” Carlisle said. Humans had grown lentils for 10,000 years, and they were totally adapted to a semi-arid climate. Lentils were drought tolerant and frost hardy, fixed nitrogen in the soil, shallow-rooted, short in stature to shade the ground and prevent evaporation, and, in theory, a crop you could earn a profit on. But it all was all theoretical, because there wasn’t a grain elevator in the state that could handle lentils. This little glitch was discovered once they had lots of lentils to sell and no way to sell them.

Realizing that they needed to create their own processing, distribution and marketing infrastructure, the group created Timeless Seeds in 1987. Its purpose was to market ecologically-appropriate rotation crops—edible legumes, for starters—in a state where most people wouldn’t know a legume from a weed. Clearly, they needed to expand beyond the state’s borders where buyers understood lentils. Their first big break came at an expo in California when a buyer from Trader Joe’s offered to purchase 400,000 pounds.

They had a market, now they needed a processing and distribution system. Their second break came when they found an old elevator in Conrad that could be leased for $40,000. The town’s banker only had two questions for them: what was organic farming, and what was a lentil. He denied the loan.

A crowd sourcing effort funded by 12 friends and family members and six farmers raised the money, and they were able to meet Trader Joe’s orders. It was a lucrative deal, but it had two flaws—there was only one customer, and when that customer no longer needed lentils, there had no customers, which is exactly what happened.

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It was a lesson that markets, like crops, needed diversification. After regrouping, the company now works with regional distributors rather than a single retail outlet.

The lentil movement had achieved success. Timeless Seeds is now the town’s largest employer, and its products are marketed in about 500 natural food stores across the country, Carlisle said.

She had everything she needed to wrap up her dissertation except for the most important part. “All I’ve told you so far is the story of this business,” she said. “That’s what I thought I was studying when I did my dissertation. But what’s underneath the story of that success? The double entendre of the “lentil underground” is that just like underneath a successful crop there is an active soil ecology, and underneath a successful business there is an active social ecology, or a moral economy, as I call it. The human communities are as important as the environmental communities.”

In developing these new farming systems, the Montana farmers had the foresight not just to create a business that would be sustainable within the existing parameters, but to actually move those parameters so that they aligned with their values and the kind of economy they wanted to have, she said. They created markets, they created institutions that could support the businesses that they wanted, and other businesses grew out of it.

It was more than just selling lentils, she said—it was about creating a new paradigm of community life. Just as the farmers had made the change from growing grains to feeding the soil, the people had started feeding their human systems.

“John Wayne was what the American West was all about,” she said. “Rugged individualism plays a huge part in our regional and national mythos, and that’s what I saw happening in these movements with the lentil plant. It wasn’t as sexy, but what makes real westerners strong is that they collaborate and make their communities strong. It’s not a John Wayne thing, it’s a community thing. That’s the way we do it.”

“The double entendre of the “lentil underground” is that like underneath a successful crop there is an active soil ecology, and underneath a successful business there is an active social ecology, or a moral economy, as I call it. The human communities are as important as the environmental communities.”

“Biological fertility is more than a different nutrient approach,” Carlisle went on. “To build biological fertility is to build community. This kind of life cultivates a new sense of awareness, a new empathy. You have to pay attention beyond this homestead; you have to pay attention beyond this season. Planting lentils becomes who you are, what you’re conscious of, how you see the world, and it softens the borders of the self. This is the great irony of the lentil underground, or, perhaps, its secret: what rugged individualism brought together, only a community can sustain.”

Tom Parker is a free lance writer from Blue Rapids, Ks. who covered the KRC Conference.

**Kansas is Broke...**

At minimum, we have to find a way to make revenue and expenditures line up, and then find a way to broaden the tax base in a way that’s fair to everybody so Kansas can meet its expenses.”

None of that would be easy because the problems are so deep, nor would changes be felt immediately, he said. And even if drastic changes were made to the tax plan now, it would take years for the economy to stabilize.

Brownback’s fiscal experiment brought so many unprecedented impacts to the state budget that it became known as “the Kansas Effect” to other states, even conservative ones. The designation was considered a warning. As other states weighed changes to their tax policies, Goossen said, they took deliberate steps to do the opposite of what Kansas had done. Major news media outlets and national magazines lampooned the state. “We have become a bit of a spectacle to the rest of the nation,” he said.

Despite that well-documented record, however, the Kansas Effect could be tapped for a national level. “The tax plan the Trump administration has proposed is uncannily similar to what Kansas put into place five years ago,” Goossen said. “Its premise is that it will spur tremendous economic growth.”

Kansas legislators and Kansas citizens could -and should- offer a cautionary tale to those who think the federal tax plan will build an economy to benefit workers, farmers and ranchers, and every day citizens.

Tom Parker is a free lance writer from Blue Rapids, Ks. who covered the KRC Conference.
Local Food and Farm News

Task force Considers Final Recommendations for 2017 Legislature

by Natalie Fullerton

The state established Local Food and Farm Task Force met through the fall to develop a new report to be submitted to the Senate Committee on Agriculture and the House Committee on Agriculture and Natural Resources at the beginning of the 2017 legislative session. The report is to contain policy and funding recommendations for expanding and supporting local food systems in Kansas and for assessing and overcoming obstacles necessary to increase locally grown food production.

In December, task force members narrowed the report to six major recommendations. They include 1) forming a Local Food & Farm Advisory Board (an action that would be the second generation of the task force); 2) establish a local food coordinator position at the Kansas Department of Agriculture; 3) increase the tax on wine to support the grape and wine industry; 4) create a Specialty Crop Council; 5) lower the state food sales tax to 5.3%; and 6) support K-State Research and Extension Specialty crop research and additional positions.

While the meetings the past few months have included several presenters providing a food safety update, sales tax on food, and even forestry opportunities in Kansas, a major focus has been researching and considering a tax on wine sold in Kansas to help support the growing grape and wine industry in the state.

In October, Scott Kohl, Viticulture and Enology Program Director at Highland Community College shared information about the college’s program and the general state of the grape and wine industry in Kansas. According to Kohl the number of wineries have grown from 12 in 2008 to 40 today. In Kansas, at least 30% of the bottle has to contain Kansas grapes to be considered a Kansas wine.

The college recently purchased a building through a USDA Rural Business Development Grant to house K-WINE or Kansas Wine Industry Network for Entrepreneurship. K-WINE provides space and equipment for up to six clients getting started in wine making. Kohl stated, “Highland can help educate growers all over the state. We have done workshops all over Kansas in more than 20 counties.”

With the help of Legislative Research Services, the task force looked into how Kansas and other states tax wine. For example, in Indiana 5 cents of the 47 cent wine excise tax collected on every gallon of wine sold in the state goes to funding a Wine Grape Market Development Council. In Kansas, a similar Council existed (the Grape and Wine Industry Advisory Council), although it had not been funded through such means. That council expired July 1, 2016.

At the November meeting, task force members considered recommending a bill that would include a 10 cent increase to the states wine excise tax (which would be taxed on all wine, not just KS wine) to help grow the industry.

KRC’s Natalie Fullerton presented a list of recommendations for the task force to consider. These included the permanent establishment of the task force, establishment of a state local foods coordinator, and reduced sales tax on food.

Ashley Jones-Wisner, Kansas City Health Kids (KCHK) provided an update on the state sales tax on food. Prior to the election, KCHK sent surveys to candidates. The survey found that 100% of candidates would support a reduction or elimination of the state sales tax on food sold at farmers markets and in grocery stores.

The task force submitted its first report to the Legislature in January 2016. They requested continuation so that they could refine their recommendations. The task force was re-established to convene in 2016 to sunset on July 1, 2017.
KRC News

KRC Receives Specialty Crop Grant
by Tom Buller

In October the Kansas Rural Center received a USDA Specialty Crop Block Grant from the Kansas Department of Agriculture for 2016-2017. The work will focus on enhancing specialty crop production and profitability through conservation practices. KRC will provide education and outreach for specialty crop farmers in Kansas regarding various conservation practices that can enhance the health of crop production systems.

Practices like cover cropping, extensive crop rotations, Integrated Pest Management (IPM), and providing habitat for beneficial insects have been shown to improve soil health, system productivity, and reduce purchased inputs. KRC will work to develop recommendations of the best ways to tailor these conservation techniques to specialty crop production Kansas and provide that information to Kansas growers to help improve production and profitability.

This project will be led by Tom Buller, who worked on KRC’s 2015-2016 Specialty Crop Block grant to research and write the just released publication, Growing Under Cover (See 19). Buller joins KRC’s regular staff as Program Director of Specialty Crop Projects. He will provide presentations to specialty crop producers starting with the Great Plains Growers Conference on January 14, 2017. He will be following that with presentations at the Kansas Farmers’ Market Conferences- February 4 in Wichita, Feb 10 in Olathe, Feb 11 in Girard, and Feb 17 in Hays. Buller can be contacted at tbuller@kansasruralcenter.org.

Grant Will Provide Education on Pollinator Protection
by Joanna Voigt

The Kansas Rural Center has received funding from the Ceres Trust to carry out work to protect pollinators from the harms of pesticides. The project will organize a grassroots effort that engages farmers, beekeepers, conservationists, local food advocates and others, and raise awareness about the harmful effects of pesticides on pollinators. It will also offer information and education on safe alternatives to pesticide use in agriculture, and advocate for public policy and programs that support a diversified, ecologically based agricultural system that promotes pollinator health.

In the US and around the world, pollinator populations have been declining for a number of years. Habitat loss, increasing use of pesticides, decreasing biodiversity, diseases, pests, and other environmental stressors have all contributed to long-term declines in pollinator populations. Recent, particularly dramatic declines in pollinator populations correspond startlingly to the rapid rise in use of systemic pesticides within the last decade. Systemic pesticides, particularly those in the neonicotinoid class, are thought to cause significant harm to pollinators, as well as other species, and their indiscriminate use is cause for alarm and a call to action.

To receive information about this project, please sign up for our e-mail updates at https://kansasruralcenter.org/, or contact Project Coordinator, Joanna Voigt, at jvoigt@kansasruralcenter.org, or 866-579-5469.
Crop enterprise budgets are a valuable tool in decision making on farms but until now there were few specialty crop enterprise budgets tailored to Kansas. Crop enterprise budgets help a farmer evaluate questions such as: will a new crop be profitable in my operation? How do I plan appropriately for specialty crops on my farm?

Two Specialty Crop Block Grant (SCBG) projects funded by USDA through the Kansas Department of Agriculture are developing information and tools to help Kansas farmers answer these questions. Seward County Community College (SCCC) and the Kansas Rural Center (KRC) each received grants in 2015-16 to address these questions and presented on their progress at the KRC’s annual conference in November.

David Coltrain, SCCC Specialty Crop Specialist, and his assistant Natalya Lowther, an experienced specialty crop grower near Lawrence, Ks., are developing crop enterprise budget (EB) templates for some specialty crops commonly grown in Kansas, including high tunnel tomatoes, high tunnel lettuce, sweet corn, sweet potatoes, green beans, fall broccoli, basil, garlic, strawberries, apples, grapes, and pecans.

According to Coltrain, “a profitable business is a sustainable business.” The EB is a critical tool to explore profitability because it shows the cost of production for each crop, against potential income and the grower can then decide if the difference is enough to make it a “business”. Coltrain explained that there are three parts of an enterprise budget – production, management and marketing. Each part contributes to the success or failure of an enterprise. The EB can show a grower whether the enterprise is profitable and should be pursued or continued. This information is also useful to lenders who, can evaluate the potential success of new investment, by understanding the costs, income, and profit potential.

The EB tools Coltrain and Lowther are developing will allow the user to change parameters such as field size, row layout, sale price, labor and input costs to customize the budget to the user’s own operation and help the grower make decisions to optimize profitability. In specialty crops, labor is the vast majority of the cost of production. In spite of the physical demands of this labor, according to Coltrain “the brain is the muscle used the most in specialty crop production.” He recommends being conservative in estimating costs, and budgeting accurately.

Coltrain teaches at Seward County Community College, after 15 years with K-State Extension and over 20 years as a farmer. SCCC is in southwest Kansas, a region where commodity agriculture dominates, but the school is leading the effort to encourage diversification into specialty crops in Kansas. SCCC provides education on using high tunnels, low tunnels, greenhouses and intensive production methods for high-value fruit and vegetable crops. In addition to growers operating farms devoted to specialty crops, this diversification could be a commodity grower who might devote the corners of a center-pivot irrigation system to high-value vegetables, which would provide additional income and security, especially during times of low commodity crop prices. In southwest Kansas, some commodity farmers are currently operating at a loss of $100 per acre.

Adding a specialty crop enterprise could be a way to survive these times of low market prices, and the enterprise budget for a specialty crop could convince a banker of potential profits. Increased production would help meet the market demand in Kansas, which currently imports 90% of its fruits and vegetables.

Natalya Lowther has years of grower experience and insight to contribute to the effort. She now works with SCCC, and is taking David’s work out to more growers, with a goal to increase production of specialty crops in Kansas.

She says existing budgets didn’t take into consideration growing conditions, varieties that do well in Kansas climates or the potential of large scale production under irrigation. Her work will also incorporate factors related to the Food Safety Modernization Act (FSMA) and Good Agriculture Practices (GAP) certification. These costs will be incorporated into the EB’s templates developed by SCCC.

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Sustainable Food and Farming News

Crop Enterprise Budgets...

*Continued from page 15*

She has faced challenges in her work, including consequences of the seasonality of farming. She sent surveys out in the fall, but a busy harvest season and the fact that a Kansas Department of Agriculture/KSU survey was sent to growers around the same time, resulted in a slow response.

She is helping to finalize the SCCC enterprise budget templates for the featured crops which will be rolled out at the Great Plains Growers Conference in January 2017, and then will be available to growers and lenders to help them understand cost of production and realistic returns for specialty crop production in Kansas.

KRC’s Tom Buller has a long history of working with specialty crops. He and his wife Jenny have operated Buller Family Farm near Lawrence since 2010. For the past year, he has worked on high tunnel and specialty crop production research and outreach for the Kansas Rural Center.

Under the SCBG, he gathered information about high tunnel production practices and economics, and generated crop enterprise budgets, which are compiled in KRC’s recent publication, *Growing Under Cover: A Kansas Grower’s Guide.* (December 2016 and available on KRC’s website. See more on page 19).

For the publication, Buller worked with five specialty crop growers in Kansas to collect detailed information on production and labor costs, to calculate net income per square foot for different types of crops commonly grown in high tunnels in Kansas. The KRC Growing Under Cover publication covers a variety of crops including sections on tomatoes, head lettuce, spinach, cucumbers, bell peppers, leafy greens, and root crops, such as beets, radishes, and carrots. These budgets can help producers understand sources of profit and loss and also contribute valuable data for the SCCC Block Grant EB’s.

Buller explained that high tunnels are different from greenhouses in that they generally lack advanced heating and cooling technology used in greenhouse production, making high tunnels a cost effective way to extend the season.

Growing in high tunnels allows for control of some aspects of the growing environment including temperature and moisture, as opposed to growing outdoors at the mercy of the weather. Tomatoes, for instance, grown under cover are less susceptible to soil-borne disease from raindrops splashing on plants. This environmental control makes high tunnels a profitable environment to grow tomatoes, and other crops, as Buller demonstrated at the conference by presenting sample EBs for high tunnel tomato and spinach production developed with data from Kansas farmers.

Crop enterprise budgets are a valuable tool for farmers and hopefully, the enterprise budgets and resources being developed by SCCC and KRC will result in more specialty crops being grown in Kansas.

Jean Stramel is a freelance writer in Lucas, KS. Tom Buller assisted with this article.

U.S. Agriculture Not Feeding the World

Contrary to the claims of agribusiness corporations and spokespeople for mainstream agriculture, most U.S. food exports go to food secure, developed countries, while only a tiny fraction go to nations where hunger is chronic. The Environmental Working Group (EWG) report states that while U.S. agribusiness spokesmen defend practices that are harmful to soil and water by claiming that farmers are only doing what it takes to “feed the world”, the facts tell a different story.

Eighty-six percent of American agricultural exports in 2015 went to 20 of the world’s wealthiest and most developed export destinations, including Canada, China, Mexico and the European Union.

According to the EWG’s senior analyst and report author Anne Weir Schechinger, “This is simply a myth adopted and deployed by U.S. agribusiness to distract the public from reality. The indisputable facts are that we are sending mostly meat products and animal food to wealthy countries, and we are not sending much food to those nations struggling to feed their people.”

Only half of one percent of U.S. agricultural exports in 2015 went to 19 nations like Haiti, Yemen, and Ethiopia where there is high or very high undernourishment.

The report says that U.S. agribusiness should assist farmers in the less developed countries to grow their own food.

*Adapted from the The Organic and Non-GMO Report#168 Nov. 2016*
Federal Farm Policy

Looking Forward for Farm Policy

by Mary Fund

In mid-December Congress and the president passed and signed a Continuing Resolution (CR) to fund the federal government and avoid a potential government shut-down on Dec. 31. This includes the US Department of Agriculture programs. Each year Congress is charged with developing and passing appropriations legislation to fund the government for the upcoming fiscal year, which begins on October 1 each year.

For the past several years, Congress has not been able to agree on appropriations so they pass Continuing Resolutions. The December 2016 CR extends last year’s funding levels to April 28, 2017. Before then, Congress and the new Administration will work out an appropriations budget to last until September 30, 2017.

Given the new administration and changes in all of the federal departments and agencies including USDA, the first half of 2017 will be telling on the future direction and fate of many federal programs. Farmers are nervous as the farm economy is precarious with low commodity prices, reminding many of the 1980’s farm crisis. Land values, while they have dipped, continue to be high, making entry into farming difficult and questionable for new farmers.

Conservation programs are needed now more than ever to protect soil and water resources and help our food producers adapt to new climate realities. But how well does the new administration understand the connections between conservation and the regenerative needs of our food system? Will the new administration heed the warnings about soil health and the impact of climate uncertainties on food production, and support programs and efforts to make our farms and food system more resilient? Will programs to help ensure the next generation of farmers and ranchers be continued? And will the gains made for sustainable farming practices over the past twenty years or more receive support?

Discussion about a 2017 federal farm bill has already begun, and programs that serve the nation’s farms and ranches will be under pressure, as will nutrition and other related food programs. Read more on this page from the National Sustainable Agriculture Coalition (NSAC) as they address farm credit and the appropriations process that will kick into gear in January.

Read more about NSAC at www.sustainableagriculture.net

Ag Credit and Appropriations Focus of Early 2017

Following several months of advocacy by the National Sustainable Agriculture Coalition (NSAC), working in close partnership with banking and other farm advocacy groups, congressional appropriators agreed to include a provision in the CR to allow USDA to make loans to farmers and ranchers in proportion to demand. This provision will make it possible for USDA to offer credit to beginning and other family farmers during the winter and spring months, when loan demand peaks, without running out of loan funds.

Making this type of change in a CR is particularly difficult and fairly rare; therefore, when it is done it is known in budget terms as an “anomaly.” NSAC extends thanks to Senators Jerry Moran (R-KS) and Jeff Merkley (D-OR) and Representatives Robert Aderholt (R-AL) and Sam Farr (D-CA) – who serve as the chairs and ranking members of the House and Senate Agriculture Appropriations Subcommittees – for working tirelessly to secure support for this important provision.

Though the anomaly is very helpful in the short term, it does not secure additional funding that would prevent another shortfall in farm credit funds for the rest of FY 2017. Next spring when Congress approves the final government funding bill, it will need to include a significant funding increase for direct and guaranteed farm operating loans.

Continued on page 18
Additional funds are needed in order to make up for a large backlog of approved loans from FY 2016 that were carried over into FY 2017. Expanded support is also needed if USDA is to be able to meet the demand for new government-assisted credit, which has been steadily rising during the widespread economic downturn in the farm economy. NSAC will continue to work with farm lenders and other farm groups to try to secure sufficient funding in next year’s final bill.

Looking Forward on Farm Programs

The spring of 2017 is shaping up to be a very busy and complicated time for the new Congress. Appropriators typically begin working on appropriations legislation for the following fiscal year shortly after the Administration releases its budget request, which most often happens in February.

Though that process might be delayed due to the administrative transition, NSAC expects Congress to do its job and complete work on FY 2018 budget resolutions and appropriations legislation in a timely manner. Given the time crunch, appropriators will be considering two fiscal years (FY 2017 and FY 2018) simultaneously.

As a reminder, both the House and Senate Appropriations Committees passed their respective agriculture appropriations bills for FY 2017 earlier this year. However, neither bill was considered on the floor of either chamber. Instead, the process stalled out and we were left with two consecutive extensions of FY 2016. Come spring 2017, appropriators will use the previously passed agriculture appropriations bills to negotiate final funding levels and policy riders for the remainder of FY 2017.

Several substantial differences exist between the House bill and the Senate bill. For example, the House bill cuts USDA’s largest working lands conservation program, the Conservation Stewardship Program (CSP), while the Senate bill does not. The House bill increases funding for USDA’s flagship, farmer-led rural development program, the Value Added Producer Grants (VAPG) program, while the Senate bill does not.

The Senate bill increases funding for the Sustainable Agriculture Research and Education (SARE) program and the Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers program, while the House bill does not.

Looking forward, NSAC will continue to advocate for sustainable agriculture priorities and will keep readers apprised as the FY 2017 appropriations cycle winds down and the FY 2018 cycle ramps up.

Taken from NSAC Dec. 9, 2016 at sustainableagriculture.net/blog/congress-prepares-to-pass-second-cr/

USDA Releases Report on Climate Adaptation Strategies

The United States Department of Agriculture (USDA) recently released a new report to provide farmers with preparation strategies, coping mechanisms, and recovery actions to acclimate to climate change impacts. It will ultimately serve as a key resource for educators and advisors as well as farmers and ranchers.

The report, titled Adaptation Resources for Agriculture: Responding to Climate Variability and Change in the Midwest and Northeast, was published by USDA’s USDA’s Climate Hubs for the Midwest, Northeast, and Northern Forests.

In 2014, USDA created the National Climate Hubs program to collect data, scientific studies, and climate projections to gauge the effects of climate change on the environment. USDA maintains seven hubs—Pacific Northwest, Southwest, Northern Plains, Southern Plains, Midwest, Southeast, and Northeast—and three sub-hubs—Caribbean, Northern Forests, and California.

According to USDA, “the hubs are intended to help maintain and strengthen agricultural production, natural resource management, and rural economic development under increasing climate variability by providing guidance on technologies and risk management practices at regional and local scales.”

“Growing Under Cover: A Kansas Grower’s Guide”

Growing Under Cover: A Kansas Grower’s Guide is here! Written by Tom Buller, Kansas Rural Center; Dr. Cary Rivard, Kansas State University, Fruit and Vegetable Extension Specialist; and Kim Oxley, Research Extension Associate, Kansas State University, Growing Under Cover: A Kansas Grower’s Guide, provides success stories from Kansas farmers who use tunnels on their farms, additional general management strategies, and specific cropping advice for some of the most successful crops grown in high tunnels in Kansas. This is the second of two Growing under cover publications from KRC.

This is a great resource for growers who are looking to start growing in high tunnels, as well as those who already have a high tunnel and are seeking to optimize its use. It will also provide a foundation for growers seeking to understand the basic management practices and needs of various crops within high tunnels.

The publication is available online at the KRC website at https://kansasruralcenter.org/growing-under-cover-2-is-here/. Full color pdf is available for download or printing; and a black and white pdf is also available.

For printed copies, contact Tom Buller at tbuller@kansasruralcenter.org. The report was funded by USDA SCBG through the Kansas Department of Agriculture.

Growing Under Cover Volume I: Guide to Polytunnel Options for Kansas Growers is also available on KRC’s website www.kansasruralcenter.org/our-publications/.

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Join KRC for our Monthly Grazing Teleconference Call on the second Monday of every month 7:30 to 9 p.m.
Hosted by Dale Kirkham, and joined by KSU’s Gary Kilgore and Keith Harmoney. These informal discussions cover all aspects of grazing management.
Join the toll-free call by entering 1-877-304-5632 and enter conference room number: 300 346 2424#
For more information, contact Dale Kirkham at 620-344-0202

Growing Under Cover Volume I: Guide to Polytunnel Options for Kansas Growers

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Rural Papers, Winter 2016
Calendar

January 9, 2017  KRC Grazing Conference Call;  Call 1-877-304-5632 Code 300 346 2424# for a toll free call; 7:30 p.m. - 9 p.m.

January 12-14, Great Plains Growers Conference, St. Joseph, MO; For more information go to: www.greatplainsgrowersconference.org/

Please check the KRC website for updated and more detailed calendar and announcement information on the above and for additional events at: www.kansasruralcenter.org

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