

# Simply Sustainable

working to sustain western agriculture



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## BUILDING RESILIENCY INTO AGRICULTURE'S INFRASTRUCTURE

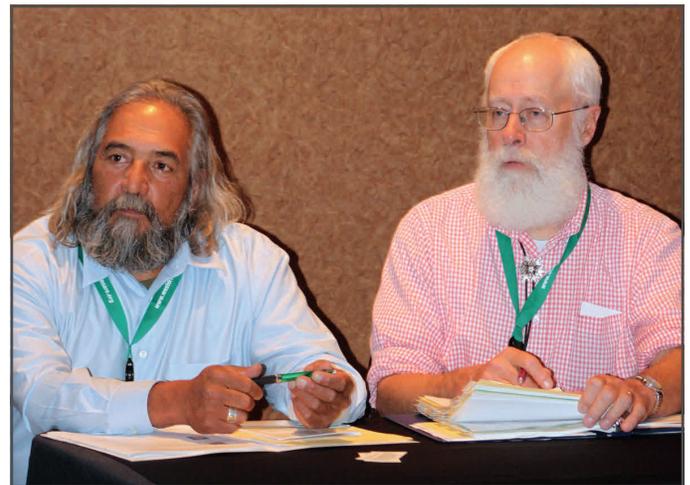
by Ron Daines, Western SARE  
Communications Consultant

The system that gets American food to American tables provides economic rewards to a long chain of participants. But the players that start that chain – America's farmers and ranchers – oftentimes get shortchanged.

To find ways to reconfigure the nation's food system so more value stays in food-producing communities, more than 200 ag producers and their supporters huddled in Portland December 3-5, 2012 at the **Strengthening Agriculture's Infrastructure** conference sponsored by Western SARE.

Through conversation, shared experiences and dozens of presentations, participants came up with a wealth of ideas to tweak, refine and regenerate agricultural infrastructure in ways that benefit producers and consumers alike (see sidebar on page 4 for accessing additional information from the conference).

Two keynote speakers set the table for the two-day



Don Bustos and Jim Dyer at the Conference

photo by Stacie Clary

conference with broad perspectives on the state of today's agricultural infrastructure: Fred Kirschenmann, distinguished fellow at the Leopold Center for Sustainable Agriculture and president of Stone Barns Center for Food and Agriculture, and Ken Meter, a food system analyst with the Crossroads Resource Center.

Meter observed that in the current ag system wealth created in production communities often ends up in the

financial sector.

On a similar note, Kirschenmann said that ag input suppliers realize that when farmers have more money, suppliers can extract more money. And while crop prices may be increasing, said Kirschenmann, "that doesn't necessarily equate into wealth as the cost of inputs is growing rapidly."

Both speakers acknowledged that the growing trend

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## NO-TILL AND COVER CROPS COMBOS HEAD WEST

by Al Kurki, Western SARE  
Professional Development Program

"Weeds and diseases are Mother Nature's way of providing diversity in absence of any." Over 200 farmers and Natural Resource Conservation Service (NRCS)

staff got an earful at the November 29 Soil Health workshop held in Great Falls, Montana. One of the central tenets of that workshop was what sustainable agriculture practitioners have said for years – take care of the soil and it will take care of you.

Featured speaker Dr. Duane Beck, of the Dakota Lakes Research Station in South Dakota, made the case for building soil health to buffer farmland from extreme weather events such as very

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## AGRICULTURAL SUSTAINABILITY, GRATITUDE AND PRUDENCE

by V. Philip Rasmussen, Coordinator  
Western Region SARE Program

The Western Region USDA-SARE Center's *Strengthening Agriculture's Infrastructure* conference has concluded. We are extremely grateful to the experts, from across the globe, who interacted with over 212 participating farmers, ranchers, agricultural professionals, scientists and distinguished educators. The online record of the conference is now replete with useful counsel, thought-provoking ideas and practical examples of sustainable, successful and profitable agriculture (<http://www.westernsare.org/infrastructure>).

The staff and I were fortunate to be able to immerse ourselves in the conference's messages and its useful two-way learning model. This two-way educational approach allowed all attendees of the conference to associate (both formally and informally) with other experts. In reality, each attendee was an expert in their area of influence. Many of these experts had been schooled by the results of "in-the-field" experiments, essential laboratory analyses and the tempering influence of both the real-world marketplace and real-world crop and livestock production environment. Hence, gratefully, we all learned from one another. As I have pondered the outcomes of the conference, I developed a deep feeling of both gratitude and deep appreciation for extremely competent farmers, ranchers and other experts who unselfishly shared both the positives and the negatives of their real-world experiences.

In more recent days, I have been re-reading what has become a cherished reference set in my personal library—the four volume *Agriculture in the United States: A Documentary History*.<sup>1</sup> This comprehensive history of our nations agricultural systems was written and compiled by the late Wayne D. Rasmussen. Mr. Rasmussen is



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COORDINATOR'S COLUMN

V. Philip Rasmussen, Ph.D.

not a relative—but he is someone that I definitely admire. During his tenure as the USDA's chief historian from 1961 to 1986 he crafted this four-volume masterpiece. Significantly, it also chronicles many of the key origins of our current agriculture sustainability efforts. However, to me, some of the most important treasures in this voluminous history are the many statements that illustrate the revered place of agriculture in the minds of some of the Founding Fathers of our beloved country, including George Washington and Thomas Jefferson.

A contemporary voice that links us to Washington's and Jefferson's statements on agriculture and sustainability are the writings and speeches of two-time Pulitzer Prize winning author, and recipient of the Presidential Medal of Freedom, David G. McCullough. McCullough played a pivotal role in developing much of the script for the Smithsonian Institution's seminal television program that defined sustainable agriculture. This video, *The Promise of the Land*, directed by David Grubin, is a "classic" in the realm of agricultural sustainability.<sup>2</sup> I require both my students and the staff at the Western SARE Center to view it. I would submit to you *Promise of the Land* is one of the

best illustrations of the complexity of a sustainable agriculture system. Like Wayne Rasmussen's four-volume treatise, it delineates a broad historical context which can aid our conversations regarding sustainability.

In many ways, the statements of Washington and Jefferson (as contained in both scholarly works) regarding agriculture and sustainability are very similar to statements made in our recent *Strengthening Agriculture's Infrastructure* conference. Conference attendees and presenters both expressed concern about the implications of society's lack of concern about the loss of topsoil, the importance of indigenous knowledge (the knowledge of a specific farm and specific soils gleaned by those who have owned and operated it for decades) and the loss of society's connection with the farmer.

In speaking about our future challenges and dilemmas while creating a truly sustainable agriculture (the noted author, McCullough), contemplating Jefferson's approach to both life and agriculture at Monticello, states (boldface and underline added):

*"At midpoint in his garden at Monticello on the edge of this spectacular panorama of the Virginia countryside he loved...Thomas Jefferson built a small pavilion, a quiet point where this most thoughtful of men could be by himself and think. **What might he make of the problems we face? My guess is that he would tell us to use our heads.** Nobody placed more value than he on the revelations of science. Few have equaled his gift of innovation, his delight in mechanical ingenuity. He believed in progress. The plow he made, those experiments here with seeds and soils, were all aimed at "improvement" to use his word. He was the last of which to stand still. **But as a naturalist, he understood our***

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*"...Our challenge, today, is to combine gratitude for our rich natural resources, the wise use of all of them — with the prudent, but forward-looking, vision of President Jefferson. The Western SARE Center endeavors to cultivate research and education projects that do just that."*

— V. Philip Rasmussen,  
Western SARE  
Coordinator

## WESTERN SARE ANNOUNCES GRADUATE STUDENT GRANTS

Western SARE announces four successful Graduate Student Research and Education projects totaling \$99,696 for 2013. Summaries can be found at [western-sare.org/Projects/Funded-Projects-by-Year/2013-Graduate-Student-Projects](http://western-sare.org/Projects/Funded-Projects-by-Year/2013-Graduate-Student-Projects).

GW13-006: **“Determination of Gas Emissions from Manure Sources in Animal Feeding Operations,”** Graduate Student: Pakorn Sutitarnnontr;

Major Professor: Scott B. Jones; Utah State University, Utah; \$25,000.

GW13-011: **“Compost-Induced Disease Suppressive Soils for Control of Verticillium Wilt of Strawberry,”** Graduate Student: Margaret Lloyd; Major Professor: Tom Gordon; UC Davis, California; \$24,992.

GW13-014: **“Reducing Drosophila *Suzukii* Management Challenges: An Alternative to Insecticide Cover**

**Sprays,”** Graduate Student: Jimmy Klick; Major Professor: Wei Yang; Oregon State University, Oregon; \$24,750.

GW13-018: **“Best Management Practices that Promote Sustainable Crop Pollination: The Role of Crop Rotations and Tillage Depth,”** Graduate Student: Katharina Ullman; Major Professor: Neal Williams; UC Davis, California; \$24,954.

## SARE OUTREACH ANNOUNCES LAUNCH OF TOPIC ROOMS

SARE Outreach launched its “Topic Rooms” section of the website to highlight hundreds of research and on-farm demonstration projects SARE has supported in the past 25 years. This section allows users to discover more on specific topics and find practical tools and guides.

A SARE Topic Room is an organized collection of mostly

SARE-based, multi-media information on important topics in sustainable agriculture. The current topics include:

**Cover Crops:** Cover crops are one of the most effective ways to improve soil health, reduce off-farm inputs and protect natural resources. Discover a wealth of educational materials developed out

of decades of SARE-funded cover crop research.

**Season Extension:** From low covers to high tunnels, from hoop houses to greenhouses – producers are finding ever more innovative ways to extend the growing season, and their income stream.

Find the Topic Rooms at [sare.org/Learning-Center/Topic-Rooms](http://sare.org/Learning-Center/Topic-Rooms)



Wishing you a very successful and  
**Happy New Year**

*from the staff of the  
 Western SARE Program*



## AGRICULTURE'S INFRASTRUCTURE *(continued)*

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toward consuming food closer to where it's grown is having a powerful impact on the food system and putting more wealth back into grower's hands.

"A food revolution is now taking place that evolved from local food systems," said Kirschenmann. "The local food movement has started to engage consumers, and consumers are turning from passive food recipients to active food citizens." He added, "As food citizens become engaged they will become a political voice." Kirschenmann advised participants to be alert for and aware of these political opportunities.

"Local foods," said Meter, "may be the best path toward economic recovery in the United States. We (community-based food systems) may be the ones building the basis of the U.S. economy."

To illustrate dysfunction in the current ag infrastructure system, Meter cited a study of four counties in northeast Oregon. The counties had \$500 million in ag production, but at a cost of \$550 million, meaning a \$50 million loss. Of the inputs used to produce that value, \$225 million came from outside. Further, consum-

ers in the region spent \$322 million for their food, but 90% of that food, or \$290 million, came from outside the region.

Adding up the \$50 million production loss, the \$225 million loss to outside inputs, and the \$290 million spent buying outside food meant an annual loss of \$565 million.

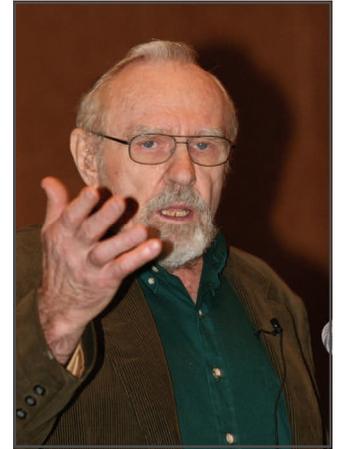
"This story is not atypical," said Meter. But he said that small steps can begin to correct the problem. For example, if consumers in the region each spent \$5 a week on local foods, it would bring in \$28 million in food income.

Meter acknowledged that direct food sales account for only 0.4% of what farms sell, but he said that direct food sales are rising rapidly, doubling in the last 15 years.

"I would argue that it's the rising force in U.S. agriculture," he said.

Kirschenmann said agriculture is facing another serious hurdle in the way it produces and distributes food as it nears the end of what he called "the neo-caloric era."

To put that in perspective, he said that before the introduction of agriculture, the hunters and gathers extracted 20 calories in food for every calorie of energy expended. When agriculture came along, farmers produced 10 calories



Fred Kirschenmann  
photo by Ron Daines

for every calorie expended.

In the neo-caloric era, which began in the 20th century, and especially after World War II, farmers doubled, tripled or even quadrupled yields. But they produced only about 1 calorie of food for 10 calories invested, and they have done it using old calories – fossil fuels, phosphorus and the like – and those will someday run in short supply.

"How will we function when we don't have these old calories?" asked Kirschenmann. "Can I still continue to do what I'm doing when the old calories are gone, when climate changes impact our weather, when we run out of water? These are the questions we need to address."

Kirschenmann advised harnessing the wisdom of the past with the science of the present, for example, scaling up innovative farming techniques like permaculture. Or following the lead of Mother Nature, which farms with perennial crops whose roots penetrate 12-18 feet into the earth as opposed to annual crops, with roots only 12-18 inches deep.

Another concern that needs attention is what Kirschenmann described as agriculture's "disappearing middle." In 2007, the number of U.S.

*"A food revolution is now taking place that evolved from local food systems. The local food movement has started to engage consumers, and consumers are turning from passive food recipients to active food citizens. As food citizens become engaged they will become a political voice."*

— Fred Kirschenmann,  
Leopold Center for  
Sustainable Agriculture

Over 210 agriculture leaders attended the Western SARE-sponsored *Strengthening Agriculture's Infrastructure* conference held in Portland, Oregon December 3-5, 2012. Western SARE considers this conference as destined to be one of the truly impactful events of the Western SARE program. As we look toward the 25<sup>th</sup> anniversary of the SARE program, the thoughtful and meaningful dialog engendered by this conference will help to frame the next 25 years of the pro-

gram. The participants discussed and learned about opportunities and challenges of recreating a system that should draw consumers closer to producers and capture more value for producers.

The Spring Issue of *Simply Sustainable* will include more reporting and highlights from this successful conference. In the meantime, please visit [westernsare.org/infrastructure](http://westernsare.org/infrastructure) to view and download speaker presentations, videos, webinars and more.

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## BEHIND REGIONAL DISTRIBUTION SUCCESS

by Andy Zieminski, SARE Outreach

Even during a recession, San Francisco-based organic produce distributor Veritable Vegetable and its retail partners are helping regional farmers garner millions of dollars in sales for their organic crops. They do this by pursuing a simple marketing strategy: maintaining the farm label along the value chain, allowing consumers to know exactly where their produce comes from as it makes its way from field to kitchen.

The strategy has worked: Veritable Vegetable has recently enjoyed massive growth in sales, a 46 percent increase from 2004 to 2009, when annual sales reached \$38 million. And many of the retail partners it sells to are also thriving. “We are making money, even during this bad economy,” says a manager at Sacramento Natural Foods Co-op, which buys much of its produce from Veritable Vegetable. “We are getting more people coming in because in this economy, people want to keep local business supported.”

Regionally-based supply chains—which link farmers to nearby consumers, businesses and institutions, often through distributors—are growing in



Gail Feenstra, UC SAREP

### A WESTERN SARE PROJECT PROFILE

popularity around the country, and are driven by strong consumer demand. But not all are successful. The lesson to be learned from the Veritable Vegetable example, says Gail Feenstra, a food systems analyst at the University of California, Davis Agricultural Sustainability Institute and speaker at the *Strengthening Agriculture's Infrastructure* conference, is that consumers do not want food that is merely local—they want food with a story. Marketing counts.

Feenstra and consultant David Visher, supported by grants from SARE and other programs of USDA's National Institute of Food and Agriculture (NIFA), studied five values-based supply chains in California, including Veritable Vegetable and Sacramento Natural Foods Co-op, to identify the challenges and opportunities associated with local food distribution and share findings with people thinking of starting such an operation.

Western SARE awarded Feenstra's 2010 grant in response to a special listening session it conducted in California, during which a diverse range of stakeholders said more research was needed on

these alternative distribution channels. Her work revealed many findings that illuminated winning and losing strategies for all the players involved. For example, along with marketing savvy, a deep understanding of the produce distribution industry is crucial for people embarking on this distribution model. Margins are so thin and price information so ubiqui-

tous that in many cases, business acumen is crucial to success, said Feenstra and Visher. As a result, they found that non-profits can easily struggle to support these supply chains compared with private businesses, largely because nonprofits often have less industry experience.

Also, a farmer who wants financing to start a new distribution strategy will likely find obstacles at the bank, because traditional financiers are not familiar with alternative distribution methods.



“Farmers can't get loans to try new distribution strategies, for example if they want to try a branding strategy, or join an aggregation system, which might be a little riskier than going to your conventional wholesaler,” said Feenstra.

That is what leads Feenstra and her UC Davis colleague, Shermain Hardesty, to the next phase of their research: learning more about the external participants in a values-based supply chain, including financiers, policy makers and regulators and the business community, so that these stakeholders might become more knowledgeable about these supply chains and provide more effective support.

To learn more:

View project report (search under SW10-810) at [sare.org/projects](http://sare.org/projects).

View Feenstra's conference presentations at [western-sare.org/infrastructure](http://western-sare.org/infrastructure).

*Regionally-based supply chains — which link farmers to nearby consumers, businesses and institutions, often through distributors — are growing in popularity around the country, and are driven by strong consumer demand. But not all are successful. The lesson to be learned... is that consumers do not want food that is merely local — they want food with a story. Marketing counts.*

## NO-TILL AND COVER CROPS *(continued)*

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heavy rains or drought. He made the case through illustrations, with just a couple shared here:

- As a test, two inches of water were applied in nine minutes on Dakota Lakes cropland. No erosion took place;
- Due to established rotations and competition, along with good sanitation, Dakota Lakes has not used grass control herbicide in 20 years or a pesticide in 12 years.

Beck pushed the envelope further with the audience by suggesting that livestock needs to be reintroduced at least near, if not on, farms. He went on to say that use of perennial crop sequences or perennial cover crops will probably be necessary in the future.

"Farmers are harvesting sunlight, carbon dioxide and water to produce food." Beck added that we need to improve our ability to use those resources in tandem with healthy soils as we edge towards the days of lower fossil fuel consumption and greater weather variability.

However, Beck was not prescribing what rotation Montana farmers need to establish. Even though he provided examples of diverse,

extended rotations, he said it is not his rotation that is the key to building healthy soils, it is *yours* - adapted to your farm's soils, agroclimatic conditions and farm goals.

Three Montana farmers who use diversified rotations, cover crops and livestock to build and maintain soil health and water holding capacity also told their stories. Two of the Montana farmers who spoke managed farms on opposite ends of the size spectrum, but they both were seeing the value of cover crops and extended rotations. Dirk and Sheila O'Connor raise crops, cattle and five kids on a 5,500 acre dryland farm near Plevna, Montana, not far from the Dakota border. Moisture is at a premium in this country, with just 12 inches of precipitation annually. Yet, their rotation includes spring and winter wheat, lentils, peas, corn, sunflowers, flax, soybeans and hay. They are trying out turnips and like what they have seen so far because the turnips stay green for cattle into December and then frost kill. No herbicide is needed to terminate them before the next crop is planted.

Julie and Kurt Taylor farm 500 acres of irrigated ground with a small registered cattle herd. They are over 400 miles west of Dirk's place, not far from the Rocky Mountain Front

in Teton County. Their rotation includes malting barley, hay, grass/legume mixes, sunflower, millet, vetch and clovers. Like Dirk, the Taylors are pleased with the turnips and radishes they have added to the rotation. "They are a great forage crop," said Julie, who went on to say that they do not use commercial fertilizer anymore. Cows, crops and minimal tillage are at work.

The workshop was co-sponsored by Montana NRCS and several central Montana conservation districts. The crowd was younger than at the many agriculture events this author has attended. The workshop was repeated in Hardin and Miles City later that week.

To learn more:

Visit [sarecec.org](http://sarecec.org) to see a Midwestern discussion about adapting production agriculture to climate and weather variability.

Consider purchasing SARE's book, *Building Soils for Better Crops*, 3<sup>rd</sup> edition: [sare.org/Learning-Center/Books/Building-Soils-for-Better-Crops-3rd-Edition](http://sare.org/Learning-Center/Books/Building-Soils-for-Better-Crops-3rd-Edition). It provides step-by-step information on soil-improving practices as well as in-depth background of what soil is to the importance of organic matter.

Phil Rasmussen, Regional SARE coordinator, better known as "No-till Phil," added that "soil health" and seminars are blossoming across the West. NRCS has recently instituted a national program emphasizing soil health. "It is marvelous to see a national emphasis on soil health and building soil organic matter," said Rasmussen. Rasmussen adds: "Building Better Soils" has been a theme within the SARE program for many years. Soils are clearly the basis of all that we grow—and we should always be cognizant of the need to build soil health."

*Dr. Duane Beck of the Dakota Lakes Research Station in South Dakota said that "farmers are harvesting sunlight, carbon dioxide and water to produce food." He added that we need to improve our ability to use those resources in tandem with healthy soils, as we edge towards the days of lower fossil fuel consumption and greater weather variability.*



## LONGTIME STATE COORDINATOR RESIGNS

Dennis Lamm, Western SARE's PDP State Coordinator for Colorado, resigned from the position in fall 2012. He served in the position since 1994 and was a great asset to the SARE program.

Jim Freeburn, Western SARE PDP regional training coordinator says of Dennis, "Dennis has been an outstanding state coordinator. He has served in every capacity imaginable and done every job with skill, integrity and enthusiasm. Western SARE owes him a debt of gratitude we can never truly repay. He's a man of great knowledge and ability, but he is also a person with great passion for the sustainable ag movement. The world needs more people like Dennis. We will miss him and we wish him well in the next chapter of his life."

Dennis was raised on a dairy farm in Pennsylvania. He obtained his B.S. in animal

husbandry at Delaware Valley College and his M.S. in animal science at Iowa State University, was a 4-H youth Extension agent in Trinidad, Colorado and received his Ph.D. in beef cattle nutrition and management from the University of Nebraska. Dennis then served on the animal science faculty at Virginia Tech in a teaching/resident instruction position and came to Colorado State University as Extension beef specialist in 1981. In 1986, he was appointed Extension Ag and Natural Resource program assistant director, where he remained for 11 years. In 1994, Dennis was promoted to full professor. After a return to animal sciences in a teaching role from 1997-2003, Dennis



Dennis Lamm

became director of the Master of Agriculture - Agricultural Extension Education graduate program and had approximately 30 distance and ten on-campus students who he has recruited and advised.

In May 2010 Dennis worked with his CSU Extension colleagues in hosting a successful and informative three days of farm tours for the national SARE Fellows program (see [westernsare.org/Professional-Development-Program/Fellows](http://westernsare.org/Professional-Development-Program/Fellows)).



## AGRICULTURE'S INFRASTRUCTURE *(continued)*

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farms rose to 2.2 million from 2.1 million, but the increase came from farms above \$500,000 in revenues and those below \$5,000.

Those in between, the ones that own most of the land, are disappearing. One reason, he said, is that buyers like Cargill, in order to compete for business with Wal-mart, tend to deal with larger producers to avoid high transaction costs. It's cheaper, for example, to buy 10 boxes from one producer than it is to buy one box from each of 10 producers.

But for farms, bigger isn't necessarily better. Kirschenmann cited research from Mike Duffy of Iowa State University, which found that farms reach peak efficiency at 600-900 acres - you get bigger and you begin to lose efficiency.

Instead of being the lowest



Ken Meter  
photo by Ron Daines

cost supplier of an undifferentiated commodity, he said, farmers can gain a competitive advantage by "providing the market with a unique and superior value in terms of quality, special features or after-sale services."

Kirschenmann listed

several relatively new agriculture ventures that have gained competitive advantages in the marketplace working through producer partnerships to develop values-based supply chains. Among these are Country Natural Beef, Shepherd's Grain, Niman Ranch, Organic Valley and Red Tomato.

Such enterprises, he said, seek cooperation rather than domination. And they're appealing to younger producers. While today's farmers are typically in their 60s, said Kirschenmann, the average age in these producer cooperatives is 46 and getting younger.

"The emerging market in the middle is highly differentiated and includes thinking and planning for resilience," he said. "Resilience is a term that's appearing more and more - and that's a positive sign."



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## GRATITUDE AND PRUDENCE *(continued)*

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**place in the large order of things.** As a farmer, he saw what tobacco and corn and erosion could do to good land. He would have understood perfectly the tragedy of the Dust Bowl or the consequences of too much irrigation in California or the destruction of a far distant rainforest. **And he, of all men, would have grave misgivings of a society that turns its back on the land and those who tend it. He, of all men, would remind us that in this self-governing nation he helped establish, responsibility for what happens is ours."**

**"He felt to the depths of his being the world has some kind of essential harmony and that the great task in human affairs is to find balance.** It's what the garden is all about, man and nature in balance. Jefferson was wrong about our society remaining one of farmers, we didn't do that. But if at the

**heart of his philosophy, he was saying all politics come back to how we care for this, the land, then, maybe, he was more right than we ever before realized.** He also knew from experience the returns to be had in human terms when stewardship, the gardener's ethic, becomes a way of life."<sup>2</sup>

In retirement, at Monticello, Jefferson wrote to his naturalist colleague, Charles Willson Peale, of Philadelphia:

*"I have often thought that if heaven had given me a choice of my position and calling, it should have been on a rich spot of earth, well watered, and near a good market for the productions of the garden. No occupation is so delightful to me as the culture of the earth, and no culture comparable to that of the garden...But though an old man, I am but a young gardener"* (From a letter to Charles Willson Peale, August 20, 1811).<sup>2</sup>

**As a Regional SARE Coordi-**

**nator, I feel impressed to say that our challenge, today, is to combine gratitude for our rich natural resources, the wise use of all of them—with the prudent, but forward-looking, vision of President Jefferson. The Western SARE Center endeavors to cultivate research and education projects that do just that.** I am both grateful and appreciative that we have the USDA-NIFA-SARE competitive research and education grants program as a tool for our sustainability quest...and I am honored to be associated with that quest.

<sup>1</sup> Rasmussen, Wayne D. (ed.) 1975. *Agriculture in the United States: A Documentary History. Volumes I-IV.* New York: Random House, 1975. Pp. xxii, 3652.

<sup>2</sup> Grubin, David (director and writer) and David McCullough (writer and narrator), *The Promise of the Land* (TV Program, PBS-Smithsonian World/WETA-TV, April 5, 1987). Archive copy: Smithsonian Institution Archives, Accession 08-081, Smithsonian Institution, Office of Telecommunications, Washington, DC.