

Plowshares and Pioneers for Kentucky Agriculture

**KENTUCKY LEADERSHIP FOR AGRICULTURAL AND ENVIRONMENTAL
SUSTAINABILITY (KLAES) PROJECT**

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The Kentucky Leadership Agriculture and Environmental Sustainability (KLAES)

Project *is a plowshare for Kentucky farmers. It has opened new ground for tilling and harvesting grassroots and institutional efforts toward sustaining the small family farm and keeping communities viable. The KLAES Project toils toward sustainable farming are yielding social, economic, and environmental results and implications for future work. It provides Kentucky farmers new opportunities. It gives them hope. It makes them pioneers.*

The following stories paint the poignant human side of the KLAES Project. While many of the stories focus on individuals, much of their work represents the collective actions of many individuals engaged in their particular KLAES Project. These individuals and many others have reached beyond the farm gate to become pioneers for Kentucky agriculture and their communities.

The KLAES Project is a collaborative effort of the Center for Sustainable Systems, Community Farm Alliance, Kentucky Department of Agriculture, Kentucky Farm Bureau, and the Kentucky Cooperative Extension Service. Partial Funding provided by the W.K. Kellogg Foundation.

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Historical Background

The Kentucky Leadership for Agriculture and Environmental Sustainability (KLAES) Project was established in 1994 with funding from W.K. Kellogg Foundation. The KLAES Project grew out of an atmosphere of collaborative problem-solving with agreements between the University of Kentucky College of Agriculture, Center for Sustainable Systems, Community Farm Alliance, the Kentucky Department of Agriculture, and the Kentucky Farm Bureau. The purpose of the project was to stimulate technical, cultural, institutional, and policy changes that would encourage sustainability in agriculture. The goal was to work with farmers to initiate specific farming systems changes and to develop a network of whole farming systems demonstrations. The project also achieved some success in building deeper relationships between farm and environmental interests in the state and encouraging positive working relationships among farm and environmental interest groups in the state and encouraging positive working relationships between commodity groups and other agricultural interest groups.

The KLAES Project authors believed the “issues of sustainability could catalyze a new vision of Kentucky agriculture, a vision that incorporates environmental protection with concerns for democratic governance, leadership development, and economic opportunity.” What follows in this magazine is a description of the pioneering efforts of the farmers and others in creating this vision for Kentucky agriculture and the lessons learned from these efforts.

Sustainable Agriculture: What does it really mean?

Early in the KLAES Project discussions were held across the state on the meaning of sustainability and agriculture. These meetings focused on the sustainability of farms rather than focusing on sustainable agriculture per se. The concerns were on sustaining the diversity of farm systems within agriculture. Most attempts to understand sustainability were centered around profitability. Regional perspectives about sustainability emerged. In eastern Kentucky, farmers are "oriented to living their lives as stewards of the family farm, and passing it on to their children." In central Kentucky, farmers' perspectives of sustainability were described as "focusing on profitability, compliance with environmental laws, and maintenance of an acceptable standard of living." Western Kentucky views of sustainability were in terms of "profitability, efficiency, preservation, integrated resource management, lifestyle, jobs, community impact, pollution control, resource use, air quality, wildlife habitat, new market development, labor costs, and management, and a need to account for forces generated by the political process."

The results of these discussions generated a general sense of direction for the KLAES Project with regard to sustainability. Through the KLAES Project, people in the agricultural community are working together to attain common goals. These fourteen KLAES Project groups focus on agriculture and its impact on the economy, the environment, and the community.

Part I: Stories about the KLAES Project Pioneers

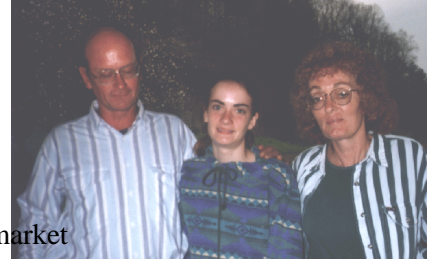
This section of the magazine highlights the stories about the individuals in the fourteen individual KLAES Projects. The stories were written using information from taped interviews with and letters from KLAES Project members during 1997-98, except where noted.

A Pioneer for Kentucky Small Family Farms-- Neil Hoffman

"The KLAES Project made us aware that farmers around the state have to solve problems on the local level. Farmers are in economic crisis. KLAES empowered us little guys to think about why agriculture is changing and figuring out ways to solve the problems on the farm. We're trying to field a new course for Kentucky agriculture. We need to be pioneers."--Neil Hoffman, Owsley County

Meet Neil Hoffman. A Kentucky small family farmer. An active member in the Goat Association and Vegetable Growers Association. A pioneer. Hoffman says small farmers have had few resources to chart a new course for Kentucky agriculture. Yet, he credits the KLAES Project with helping people to think and to brainstorm about ways to solve farming problems. Through the KLAES Project, a statewide network, a grassroots way of problem-solving versus top-down problem-solving is working. The Owsley County Goat Producers are having some success solving problems on the farm. They've discovered new options for marketing goats, improved the market prices for their goats through improved breeding practices and tapped into larger markets. Hoffman dreams of Kentucky being known for its goat production, not unlike Kentucky is recognized for its horse industry today. He'd like to see Kentucky goat farmers someday have support for superior goat meat production, a packing house, and a goat specialist to help them market products.

Hoffman hopes a vegetable industry can be developed in Kentucky. He says Kentucky needs a marketing infrastructure to help small farmers weather market fluctuations and



unpredictable weather conditions. He says, "If we don't, farmers will continue to be discouraged and go back to tobacco. The KLAES Project enabled people who didn't have the resources to buy things like a pallet jack or scales that cost money." These things have helped the Owsley County Vegetable Association make progress. Fifty to seventy-five farmers are working together to overcome previous resistance to try new options. New vegetable varieties were tried and compared to overcome bacteria leaf spot in green peppers. Fall cabbage proved to be profitable; and by increasing acreage planted in cabbage, more people made money through cooperative marketing.

Hoffman believes the KLAES Project is concerned about sustaining rural communities. He says, "the small farm is the heart of rural America. And if small farms go out of business, the rural community dies. If the rural community dies, people move away to the cities." As for the future of farming, he says, "If it's going to take a computer to farm in the 21st century and if it's the only way you're going to do it, then there will be no small farmers in the future. The little guy can't compete. I don't need a global positioning satellite to tell me where to put my fertilizer. I'd like to see us quit losing ground --we're losing family farms."

Neil Hoffman farms with his wife Denise in Owsley County, Kentucky. Denise was recently named to the Kentucky Commission on Family Farms. Their daughter, Megan, is a freshman at Transylvania College.

New Grazing Practices Helpful for Dairy Farmer -- Bo Gander

"The things I enjoy out of farming I can't put in a toolbox. It's something I enjoy. I realize it's not for everyone -- not by a long shot. There are a lot of things you can do to make a lot of money - especially to be a better provider for a family... but as long as we can survive I don't think the atmosphere can be any better with money or anything else, as I think it can be on the farm. -- Bo Gander, Lincoln County Dairy Farmer

Bo Gander is a hopeful man. He says, "My hopes and dreams for farming are just to hang on." And he's not just referring to the bottom line on a ledger sheet. Perched on the hillside above the Gander farm is a looming housing development fueled by the



good times and factory work from the neighboring county. The day we visited Bo, he was installing a stack pad and leaching system to manage

animal waste. Bo says, "Good land just doesn't pop up anywhere."

He should know. Bo Gander grew up on a dairy farm and decided as a young man he'd had enough of farming. He told his dad he could do anything he wanted with the farm because he'd never be back. And his dad did -- he gave the farm to Bo's younger brother. Gander tried military service and factory work -- and decided that farming wasn't that bad. He returned to farming in 1991 by buying a farm.

Gander is making it dairy farming today by trying new grazing practices. He says, "We're still experimenting with where we are putting fences, watering, and grazing." He's now in his third year with the grazing project and expects this year to be his best year so far. Since starting the grazing project, he has lowered feed costs and has better herd health. The first year he supplemented his stored forages with 14 acres of alfalfa rotationally grazed. He keeps about 35

to 40 milking cows. Without the rotation practice, the cows would have picked the field clear in two or three weeks. Now he has most of his acreage in alfalfa, designs moveable paddocks with fencing, and practices intensive grazing management practices.

He hopes his farm can be passed on to his son someday -- if his son wants to farm-- and if the farm can survive the pressure from housing growth in the country.

Wren Dairy Farm Family Tries New Ways With Supplemental Grazing Project

"Well, for a while . . . I was the talk at the coffee shop . . . I was the laugh around here . . . spending money . . . Ray's spending money . . . doing this . . . laughing behind my back . . . Well, now I see a lot of people coming around looking. They're taking it from an objective point of view. They're asking 'how can I get into this . . . the dairy profits program?' I give credit to the University of Kentucky." -- Ray Wren, Lincoln County Dairy Farmer

Ray and Connie Wren have increased milk production and are continuing to cut costs with the supplemental grazing program. Increased profits from this farm have helped the Wrens build a new free stall barn, a silo, a shop, and to purchase a water tank, tractor, and fencing. What's even more remarkable is that they have been dairying only since March 1991. Ray Wren reports the grazing program has helped increase milk production. The Wrens' herd is one of three herds in Lincoln County using supplemental grazing where a percentage of the forage needs are supplied by pasture. This is different than herds which receive 90 to 100 percent of forage base from pasture.

Wren says intensive grazing makes better use of small farms. Small acreage, such as 100 acres, is a good size for a 30 to 50 cow herd. Extension agent Dan Grigson agrees that 50 cows is a good economic unit for management, labor needs, and for making a good living for a two to three person household. Grigson and Wren say grazing management is not something you can learn from a book. The Lincoln County group has worked and learned together the

technical and management practices needed for increased milk production.

Environmental needs are also being addressed on the Wren farm. Matching monies were received from the Soil Conservation and Kentucky Conservation districts for cost-share work on the Wrens' farm water system, water ways, and manure holding system. Grigson says there are financial risks, and the KLAES Project and the cost-share grants have taken away some of those risks.

Ray Wren believes farmers should not be afraid to try new things. He believes farmers will have to be more "public friendly than they have been in the past." He says, "Farms need to be a thing of beauty, not an eye sore, or have an obnoxious smell. Farms need to blend in with the community." He jokes he hopes someday his farm becomes picturesque enough to be on the front cover of *Farms and Gardens*.

Organic Grower Cecilia Hart Learns by Doing

"The KLAES Project gave us an opportunity to diversify our organic growing efforts. I'm glad to be involved in the KLAES Organic Apple Project since we did not have any farming background. When we moved here we got a Stark Brothers catalog and the whole family sat down and picked out their favorite variety. We purchased the trees and planted them, but we did not caretake them. Now that doesn't feel right . . . In farming it's hard to get out and learn things. So, the opportunity to be involved with the KLAES Project and to learn to do it right without trying to do it on your own has been great. . .and I'm one who learns best by learning hands-on." -- Cecilia Hart, organic grower and entrepreneur

Cecilia Hart is grounded by her learning experiences. She wears the first rock tilled up from her garden around her neck. The rock, handcrafted into a piece of jewelry, represents the care and creativity that Cecilia puts into her livelihood as an organic grower. Her apple trees are thriving and will add to the diversity of the family farm in the future. Other aspects of the organic grower's operation are expanding. Cecilia and her husband, Tom, are adding

200 inoculated shiitake mushroom logs to their existing 200 logs this year. Cecilia and her husband are entrepreneurial in their farming operation. They participate in the Lexington Farmers' Market and offer tours and educational activities on their farm. They plan to expand their agri-tourism efforts in the future. They have been farming full-time for seven years and are now beginning to learn what grows best on their farm.



They envision their operation becoming more profitable. They see their best opportunities in selling farm produce locally and to Natural Bridge State Park. Participation in the KLAES Project helps them to share the financial risks in the investment of the organic apple trial and provides valuable hands-on learning experiences. One of Cecilia's goals is to make enough from farming to be able to purchase health insurance one of these days. Cecilia or her husband take winter jobs to supplement their income.

IPM/Organic Apple Production Project -- John Strang

The following interview with John Strang, Extension Specialist in Fruit and Vegetables, describes the work with the Sustainable Integrated Pest Management and Organic Apple Production Project.

Q: What was the goal of the IPM/Organic Apple Production project?

A: The apple project set out to compare the economics of production and marketing of one scab-susceptible and five scab-immune apple varieties using Integrated Pest Management and organic production methods. At the initiation of this project 60 apple trees were planted by three organic growers and three commercial IPM growers in central and eastern Kentucky.

Q: What were some of the challenges associated with the project?

A: At the inception of this project, participants had not recognized the level of antagonism that existed on the part of a number of commercial apple growers towards organic growers. They strongly felt that apples could not be grown organically, that the scab-immune cultivars were not commercially viable, that publicity from this project would unfairly bias the public toward organic production and consequently hurt retail sales, and that the University should not waste its time working with organic growers. Commercial growers felt that state specialists with fruit responsibilities were not spending enough time on commercial apple grower problems as it was. In response to this, three focus group sessions were held with commercial growers and organic growers, with the help of rural sociologists adept in conflict resolution.

Q: What happened as a result of these sessions?

A: A number of benefits to the state have accrued from this and other associated KLAES projects. As a result of the focus group sessions, commercial growers and organic growers obtained a better understanding of each other, hostilities were reduced, and an agreement was made between commercial and organic growers to modify this project. Through the efforts of Robert Hadad, organic alternatives were added to our home and disease control guide. To date, over 8,000 copies have been distributed and we are currently working on making minor revisions to print more copies, because it is out of stock. Robert has also developed a publication on organic fertilization, compiled organic production information on vegetable production, initiated an organic production newsletter, "Sharing of the Plough," helped to initiate the Kentucky Organic Farming and Gardening Association, participated in the Kentucky State Sustainable Agriculture Workshops, and made many grower visits and phone consultations.

Carl Harper made many organic grower visits, helped with the initial setup of the apple project, initiated slide scanning of insect and production pictures for the CD-ROM version of our Commercial Vegetable Crop Recommendations (ID-36) publication, helped to develop apple and peach insect

and disease calendar tables, which tell growers when to look for these pests in the field, and helped with a study on the use of fine meshed netting for excluding pests from blueberries. Dana Hadad, who replaced Carl when he accepted



another position, worked extensively with the apple project growers, tabulated and analyzed data for the project, worked with growers on the use of the Maryblyt fire blight prediction program, helped with a landscape fabric strawberry production study intended to reduce weed populations, scanned slides, and helped prepare information for our Integrated Crop Management for Kentucky Cabbage Scout Manual. A statewide new apple grower school was held as a result of this project and an organic grower session has been added to the annual state fruit and vegetable grower meetings for the last three years. Project growers have been trained in fertilization, pruning, disease and insect identification and control, and running the Maryblyt disease prediction program. Tree trunk diameter and shoot growth measurements as well as tree insect and disease damage rating data have been tabulated for all plots.

Q: Your KLAES Project covered a lot of different needs for growers. What did you personally learn from working with the KLAES Projects?

A: I have learned a number of lessons in conjunction with this project. It is very difficult to conduct a multiple-year project of this nature on grower farms and obtain meaningful data. There are many factors that affect studies that are not on research farms for which there is no control. This study was set up with three organic grower and three IPM grower location replicates, which is a minimum for statistical analysis. Through the three years of this study, a total of ten growers have been involved in the project. Two growers essentially lost all of their trees the first

season, one to grasshopper damage that girdled and killed the trees and the other to soil rot diseases, caused by an exceptionally wet season. One of these growers dropped out and the other replanted his trees. Two growers have had serious deer feeding problems on their trees, which has weakened and set these trees back. Three growers have had financial problems, causing one grower not to start the project and two growers have left their farms. We still have good grower plots, but the project is seriously compromised at this point, because large plot differences are due mainly to extenuating circumstances and not to IPM or organic production practices.

In retrospect it appears that it is much more difficult to establish apple orchards now than in the past due to substantially higher deer populations, more intense economic constraints on small farmers, and more extreme weather variations. We have made some valuable production contributions for growers in the state through this and the other Kellogg projects and we will continue to work with participating growers in this project. At this point I am, however, skeptical of achieving one of the primary goals of this project of being able to make a statistical comparison of IPM and Organic production practices.

Farmers' Markets Lead to Increased Production--Luther Mason

"Farming is hard work." -- Luther Mason, Scott County farmer



Luther and Anne Mason will be the first ones to tell you that times have changed in Scott County, Kentucky. The area surrounding their farmland was all country 15 to 20 years ago. But Toyota Manufacturing came to town a few miles up the road, offering better paying jobs than farm work. Luther says, "We lose farmers every year in this community. The farms are becoming bigger but new farm owners are not paying for the farm through farming." He's seen the impact from the loss

of farming in his small farming community over the last 30 years.

"First the farmers go," he says, "then the stores, then the church. When we added a tractor in 1948, the tractor took three or four people off the farm and so on. They had to go work somewhere to make a living where the work was."

Yet he credits the KLAES Project with making the farmers for the Scott County Market better able to grow a larger quantity of produce. Through the purchase of vegetable production equipment, many farmers like the Masons have become involved in agricultural diversification efforts and have learned to conserve and utilize water and fertilization through the drip irrigation method. The irrigation equipment is used by all the members of the Scott County Farmers' Market. It is stored at the county Extension office and checked out by members when needed.

Mark Reece, Scott County Extension agent, says the KLAES Project has not only benefitted members of the Farmers' Market but has led to increased commercial production of vegetables as well. This \$10,000 investment has just this year led to a state and federal grant of \$180,000, a state budgetary allotment of \$50,000, and a local investment of approximately \$80,000 to construct a vegetable processing facility in Scott County which will benefit all of central Kentucky. With the unsettling picture facing agriculture in Kentucky, efforts such as this are providing hope to area farmers.

Luther and Anne say the KLAES Project allows small family farmers to have extra income besides just depending on tobacco. They see farming as a family affair. This year Anne and Luther are planning to involve their grandchildren in planning for their crops.

Luther says future farmers need help getting started in farming. He sees that many young farmers would not have the finances to start. He says, "Farming is hard work; and to farm today you need more education, as well as mechanical skills to work on your equipment. It'd be independent work but hard work."

You'll find the Masons working hard both on and off the farm. Anne is active with county school

board and educational committees. Luther serves on the Scott County Extension Council and is currently President of the Scott County Farmers' Market.

Farmer and Marketer for Kentucky Products -- Ann Bell

“After trying to do every other job in the world I could find other than farming, I slowly got back to it,” says Ann Bell, on her return to the farm. She grew up on a farm and always had an interest in farming but didn’t find her way back to her vocation until after completing college when someone suggested she should involve herself and her family in a starting a Farmers’ Market in her hometown of Georgetown, Kentucky. So Ann negotiated with her brother, who grows pumpkins and other commodities; and her father offered some equipment and space. Ann says, “As much as I tried to get away from farming, I realized that’s where I wanted to be. I realized I’d never be happy doing anything else.” Farming has been a family tradition for her family. Her grandfather, father, and brother all farm. “Like most teenagers, by the time I got to high school I’d tried everything to get off the farm because I felt I was always the one who was stuck with chores . . . chopping thistle, chopping tobacco.



Today Ann grows vegetables and started some fruit last year. She sells vegetables in both the Lexington and Scott County Farmers’ Markets and also sells to retail, restaurant, and wholesale markets. “I’d like to especially see the Scott County Farmers’ Market succeed. It’s my hometown and my home community. It’s nice to know who you are selling your vegetables to. And actually believe them when they say they appreciate it.” The Scott County Farmers’ Market has a good number of part-time and retired farmers, so the irrigation equipment purchased with the grant funding made a difference in whether or not people could participate in the market. Farmers’ Markets often serve as incubators for farmers learning

more about how to market their products. The efforts to promote and publicize their farmers’ markets have included mini-festivals and changing locations and hours of business to improve sales. Ann uses the farmers’ markets as one of many marketing strategies. She and her brother have both attended the National Direct Marketing Association meeting. Ann is providing leadership in forming a Kentucky network of farmers interested in direct marketing their products.

“We’re diversifying the whole farm from lamb, beef, and tobacco to include vegetable crops; and we’re diversifying our marketing efforts as well.” One of the challenges to marketing their own produce is having to deal with the perishable aspect. “We’re learning as we go. As for marketing and selling vegetables with a three-day shelf life, that’s a whole new world for us. It’s challenging to diversify and market to fit in with our commodities and all of my family participating on the same land to make a living.”

She credits the KLAES Project for providing the opportunity for farmers to learn to work together rather than being pitted against each other. “I think KLAES is one of those vehicles for encouraging farmers to work together. For example, I look at the vegetable market and the poor market structure in our state for vegetable and horticulture crops. And there’s a lot of different groups moving towards the betterment of all, like us at the Brink Conference. As a result, I’m looking for opportunities for connections between these different groups.”

Ann has hopes of finding her niche market and would someday like to start a community supported agriculture (CSA) in her community. She says, “I think our community and our neighbors are becoming more experienced in growing fruits and vegetables. I think by looking for alternatives to tobacco we’ve found something that will supplement tobacco as long as it is still around.”

Preparing for the Feast: The Urban Consumer, the Chef, and the Farmer -- Sue Weant

Ask Sue Weant, one of the co-founders of the Food Harvest Festivals for the cities of Louisville and Lexington, about buying Kentucky farm products and you'll become a committed supporter of Kentucky agriculture. Sue has always believed it is important to purchase food from local farmers. Although she did not grow up on a farm, she took her daughters to Farmers' Markets and bought local produce because she believed it was healthier for her family and the environment.

In 1995, Sarah Fritschner, foods editor of the *Louisville Courier*, approached Sue, who was at the time an organizer with Mothers and Others for a Liveable Planet, with the idea of organizing a food festival in Louisville. They decided to organize a festival to educate consumers about the benefits of buying locally produced foods. Sue Weant wrote her first grant proposal and they spent a year organizing volunteer help from numerous individuals and gained financial assistance with the KLAES grant. The first event in 1995 attracted 5,000 people and has since doubled in attendance and led to the formation of a Lexington harvest festival as well. Smaller cities such as Versailles have held smaller scale festivals in conjunction with their local farmers' markets after hearing about the festival from the organizers of the Ohio Valley in Louisville.

Sue believes if small farmers are going to survive then we are going to have to help them find ways to sell directly to consumers. One way is through creating awareness with the festivals. At the festivals, chefs are paired with local farmers' fresh produce to create different dishes that consumers can sample and buy the product from the farmer. At the festival you'll find dishes from apple pancakes to shrimp to shiitake mushrooms -- all grown in Kentucky. She says, "If consumers demand more local produce, then more people will become interested



in supporting Kentucky agriculture." She is thankful that the KLAES money was available as seed money to get things started. The festivals are now self-sustaining financially, thanks to her efforts and the work of the Harvest Festival volunteers.

And there have been many spin-offs from the Harvest Festivals. The League of Cities is encouraging the development of farmers' markets. There is now a Friends of Farmers' Markets group giving leadership to the development of a public market for Kentucky agriculture products. Another organization, Partners for Family Farms, was organized this year. Numerous feature stories have been written about the harvest festivals.

Sue says, "One of the most important aspects of festivals is the relationships they build. Farmers and consumers; chefs and consumers; Farmers and chefs. New collaborations with many stakeholders-- FarmAid, Community Farm Alliance, Farm Bureau, WUKY radio, the mayors' office, the University of Kentucky and many others are working together on the festivals. I personally think collaboration is necessary for things to become more sustainable. The KLAES Project has brought many of these groups together."

Building Markets through the Ohio Valley Food Festival-- Sarah Fritschner

Sarah Fritschner, one of the founders of the Ohio Valley Food Festival and foods editor for the Louisville Courier-Journal, shared her reflections about the festival with us.



Q: Why is the Ohio Valley Food Festival important?

A: The festival is the KLAES Project's only rural-urban link, and I, as its originator, am firmly entrenched in urban life. So I am not a small farmer benefitting from KLAES. But I firmly believe that small farmers must develop relationships with urban consumers. As less than 2 percent of the population, farmers need to forge relationships with people who

can give them political voice; and I believe the urban consumer might be an advantageous partner. We want food that tastes good, we want it to be nutritious, we want to preserve the green space surrounding our urban landscapes and we want healthy communities. In Kentucky, all this means working partnerships with small farms. Those of us familiar with culinary literature (I am a food editor of the state's largest daily newspaper) know that chefs and consumers want locally grown, ultra-fresh and sometimes organically grown produce. We are interested in local agriculture products from goat cheese to bacon. The Ohio Valley Harvest Festival Committee hoped our event would break down barriers that prevent local farm products from getting to local markets.

Q: What did you learn from your work with the project?

A: I learned from my work with the project that educating chefs and consumers about farmers (and vice versa) is an evolutionary process that does not have much support from the conventional agricultural systems in place. The most important function we (the organizing committee) performed was to enhance communication between the farm segment and the urban segment. We almost literally translated for the two groups when they dealt with each other.

Farmers who'd like to make a living through more direct markets require more help finding those markets, entering the markets, and publicizing themselves. The help needs to be very specific and tailored to the small farm, something that doesn't seem forthcoming from extant institutions such as Extension and the Department of Agriculture.

All participants are fallible and some even fail at their responsibilities. Within a tiny organization like ours, it's very easy to succumb to a weak link. Instead of getting discouraged, I've learned to see our committee as a reflection of community at large -- from church groups to private enterprise -- where some people are more effective workers than others.

Q: Where do you see the Festival heading?

A: The festival project leads to a black hole of possibilities. As much manpower and money as could feed into the committee, we could use. Here are some ideas:

1) We've talked about expanding the event, to include more people and sponsors over a longer period of time. Such an expansion would help mitigate damage done by rain (we have been lucky not to be rained on during our five hour festival). We could include more activities (including live music) that could generate more publicity. An expanded effort could include other participants (wine makers can't participate in a Sunday event).

2) More manpower - and perhaps subsidized manpower -- would be able to produce a handbook to use as a template when other communities wish to duplicate our event (the speeches I've made at various grower conferences have shown us there's interest in the project, and the festival has been duplicated in Lexington).

3) More manpower could help us promote the event better and to get more monetary support.

4) A small group of original participants is now looking into a small, more elite festival focusing on tomatoes. If the festival takes place, it will be different (and thus "new") media opportunity.

5) Many farmers felt strongly that the Harvest Festival Committee should work harder at getting consumers to the rural communities by promoting festivals on the farms.

6) We could use more help developing other aspects of the Harvest Festival, such as agricultural education (bee hive displays, wool spinning, corn grinding, and so on). We were never short on ideas, we just need more manpower.

Q: Any other thoughts?

A: I wish there was more support from the agricultural infrastructure to help figure out small but profitable markets. Doesn't it make sense that they try to discover how much Kentucky restaurants spend on fresh produce? I wish people who are paid to promote Kentucky products would develop or facilitate development of profitable markets for farmers that would provide good tasting, nutritious, unusual and high quality agricultural goods to urban consumers, including chefs.

After working three years on this project, I am shocked at how little support we get from conventional agriculture, and how little imagination the agricultural community shows in trying to reach urban consumers.

I think the Ohio Valley Festival began a dialogue between urban consumers and farmers (there's now a marketing committee for nine weekly farm markets in Louisville). But there's so much work to do.

Growing by Doing: Kentucky Organic Growers -- Susan Harkins

Susan Harkins, a grower in Bourbon County, Kentucky described in an interview with us how the Kentucky Organic Growers group formed and evolved over the KLAES Project.

Q: How did the Kentucky Organic Growers get started?

A: The Kentucky Organic Growers started as a dream. Pam Clay approached Kathy Aman, who developed the Kentucky Organic Certification program and worked for the Kentucky Department of Agriculture, with the idea of bringing organic growers together from across the state to jointly market produce. Pam Clay sold the idea to the Kentucky Commodity Growers. They agreed to participate in a two year pilot project and furnished office space and equipment. The Community Farm Alliance also supported the project. Funding was also provided from the Kentucky Commodity Growers, private donations, and the Community Farm Alliance. The Kentucky Organic Growers (KOG) was in its earliest stages with a distribution point in New Haven, Kentucky with a building, cooler, supplies, van and approximately 20 growers, when Hal Hamilton brought a Kellogg representative to Kentucky. I was part of that planning initial meeting in Paris, Kentucky, where Oran Hesterman and another person described the Kellogg grant program. It was very moving and something I will always be grateful for being a part of.

Q: Describe the progress of the Kentucky Organic Growers Cooperative.

A: Kentucky Organic Growers continued its first year achieving a moderate level of success in production, distribution, and marketing. Pam Clay and Kathy Aman ran the organization, with a KOG board of directors meeting monthly and working very hard to facilitate our project. Pam Clay orchestrated the

workshops throughout the year. At some point during this time, the KLAES Project formed and we were selected as one of its individual projects.

Our first year ended on a positive note. We were a team of strangers at first and became friends and co-workers. We celebrated with a wonderful harvest festival in Midway, Kentucky where producers and community-supported agriculture (CSA) buyers came together to meet and compare experiences. Wendell Berry spoke to the group. We had hayrides, and a farmer musical band performed in downtown Midway.

At our winter meeting we elected new officers and developed a new workshop schedule for the second year. Our second year started well. We increased our memberships and restaurant sales. We also hired a market manager and driver. We lost a few growers and gained a few new ones. During the second year, funding became more of a problem. Produce sales were not covering all the expenses (i.e. insurance, promotional materials, van repairs). Relations became strained among the growers; however, business continued with the consumer receiving a quality product with consistent delivery.

At this point, the Kentucky Organic Growers split into two groups. Organic Kentucky Producers Association (OKPA) formed, inviting a select group of growers to participate and taking consumer lists, supplies, and records. There was really only one group --OKPA -- and what was left was not OKPA. The Organic Kentucky Producers' Association actively pursued funding from the KLAES Project, Kentucky Commodity Growers, and the University of Kentucky. The OKPA group has recently split again into two separate groups with litigation pending. Not a pretty story for a cooperative, but farmers are still growing and consumers are still buying. I send interested customers to them and support their efforts. There are some fine producers involved. The group that was left out of OKPA was rather small. Three producers were from the Lexington area and two or three were from the Louisville area. We still fly the



KOG flag either collectively or individually. Both groups have participated in joint growing and marketing efforts. We are very supportive of one another, but we conduct business as individuals.

Q: So, in spite of all the ups and downs you've experienced, why are you still involved?

A: I personally attribute much of the work that Sue Weant and I do as an outreach of our KLAES experience. The original collaborative effort expressed by Kellogg has always stayed with me and guides me to many of the choice I make. I truly regret that I had not had the Kentucky Natural Resources Leadership training prior to the formation of KOG and in fact that I could not devote the time needed to the second year. These things may not have changed the outcome of KOG, but I wish I could have shared the information with all of those who tried so hard and saved many hurt feelings.

I sing praises of the Kellogg grant's work across the country. I know that all projects are not successful; but they all required efforts to be made and lessons to be learned in the spirit of diversity, commonality, and collaborative problem-solving and decision-making.

Testing Water at Fleming Creek -- Kerrie Davis, Whitnee Barker, Tricia Hornsby, Jonathan Woods

The Fleming Creek Watershed Project is unique in several ways, the most significant of which is the involvement of area students in the issue of preservation of water quality. The Fleming Creek watershed drains nearly one-third of Fleming County, Kentucky. The high concentration of livestock operations situated on or near Fleming Creek and its many tributaries, along with the presence of a decades old landfill, have resulted in severe degradation of the quality of the water. This KLAES Project focused on monitoring and attempting to improve the quality of the water flowing through the watershed system. In addition to the monitoring work done by students, this project was strengthened by the interest and commitment of farm operators whose farming operations have an impact on the stream, and by

involvement and cooperation of several agencies which have a long-standing stake in both the quality of the water and the operations of the farms. The University of Kentucky Cooperative Extension Service, the Natural Resources Conservation Service (USDA-NRCS), and the Kentucky Division of Water all provided assistance to the project through cost-sharing assistance for the implementation of Best Management Practices (BMPs) and advice and assistance in the monitoring of the streams.

Finally, adult leaders, both parents of student participants and farmers with the vision and foresight to undertake a project which previously might have divided the community, provided the leadership and guidance to sustain the project over several years. Here's a glimpse at the experiences of the teens and



other involved in the project:

Whitnee Barker braved the blustery weather and carefully climbed down the rugged Craintown Branch creek bank with a pH meter in her hands. She dipped some water from the chilly Fleming Creek tributary and waited for the meter to show the fluid's level of acidity:

;7.72. It was a good day - the count was low.

But Barker, 15, a sophomore at Fleming County High School, and 23 other middle and high school students in the county are attempting to undo years of neglect by helping get the creek cleaned up. The students - participants in a group known as Sustainable Agriculture for Community and Kids (SACK) - make weekly after-school trips to sites on Fleming Creek, testing for pollutants and later suggesting ways to control them.

The students said there is some urgency to their efforts because the creek is in such bad condition. "Right now, the creek's in a situation that can be saved," said Tricia Hornsby, 16, a Fleming County High junior who participates in the volunteer project. "But if it goes any further, who knows?"

Tests were originally performed on the creek in 1992 by the Kentucky Division of Water, which found the creek to be severely polluted - primarily by animal wastes - to the point of being unsafe. The Community Farm Alliance then set up the Fleming Creek Watershed Water Quality Project.

Students were enlisted to do the testing as a way to increase youth awareness and to instill a feeling of community ownership of the pollution problems, said Randall Wood, a water conservation technical specialist who works with the farm alliance. High-tech testing equipment was brought with grant money the project received last year, students were selected and trained, and the testing and cleanup efforts got started.

On Tuesdays, Charlie Masters, a science teacher at Simons Middle School who has coordinated the project, takes the students to that week's testing site. They test for suspended solids, iron content and other harmful substances in the creek.

The students also have compiled an oral history of the creek, which includes interviews with Fleming Creek farmers and landowners who remember when the creek was safe and clean. Wood said that the students have become possessive of the creek and its problems and that they rarely miss the extracurricular activity. And the project caused Hornsby to change her mind about what she wants to do in life.

She has decided to study environmental science or a related field in college instead of a business degree. "I've realized that being cooped up in an office all day would kill me," Hornsby said as she performed a test of dissolved nitrogen in water. "I need to get out and be closer to nature - like this."

Tribby Vice, 39, can remember when Fleming Creek was a favorite spot for fishermen and youngsters who just wanted to cool off during the summer. "When I was young, we fished and swam in it all the time. All you needed was a worm and a hook, and you could catch all kinds of red-eye and sunfish down there," Vice said, pointing to a distant place on his dairy farm - off KY 57 - where there used to be a bridge.

But it might be the country's large number of dairy farms - especially the nearly 80 that are directly on the creek - that has caused the waterway's demise.

According to state agricultural statistics, Fleming County has more than 26,000 beef and dairy cattle, ranking in the top three counties in the state each year in that category.

From that large number of cattle, close to 19,000 tons of manure was allowed to flow into Fleming Creek annually, said James Sundys, a water quality specialist. Much of that was the result of allowing cattle to roam freely in the creek to get water.

Masters said that for this project to be successful, the neglect must come to an end. "We've treated our creek like a sewer for a lot of years," he said. "We just can't continue doing that forever."

Thanks to the students' efforts, the end of the neglect might come sooner than later. "Because of this project, the animal waste problem is being addressed," Sundys said. "For a change, it's being diverted to places other than our waterways."

This story was written by David Goss, reprinted with permission from the Lexington-Herald Leader.

Industrial Fibers Network Explores Alternative Crops -- Dorothy Robertson

Farmers across the country are devising strategies to make their farms economically viable. They are researching new crops and developing markets in an effort to preserve the idea of the independent farm operator. They are bucking the tides of farm consolidation, vertical integration, and contract farming. These farmers have encountered many barriers, particularly access to dependable markets. But few if any of them have faced the problem of the Industrial Fiber Network: the crop they want to research and grow is illegal.

Hemp was an important cash crop in Kentucky during the first third of the 20th century, and again during World War II. But its close resemblance to the marijuana plant resulted in its demise as a cultivated crop. It is now illegal to grow in the United States, and Kentucky has some of the most restrictive laws concerning cultivation. Against this backdrop the advocates of hemp are striving for the right to grow and market a crop which they believe can once again be profitable on Kentucky farms.

Dorothy Robertson, farmer and Community Farm Alliance member writes about the efforts of the Industrial Fibers Network group. She says, “ We felt that the industrial fibers could be a supplemental



income for farmers beset with increasing problems from a continuing cost-price squeeze and a myriad of questions

facing the future of tobacco.” Using the Kellogg grant to begin a study about industrial fibers, the group traveled to Mississippi to look at Kenaf, a semi-tropical fiber plant being grown and processed there. In North Carolina, they saw kenaf being made into high quality paper from the kenaf grown in Mississippi.

Members of the study group raised kenaf in three trial plots in Bath and Marion counties. The kenaf grew 12 to 14 feet in height but did not produce seeds due to the shorter Kentucky growing season. Dorothy says, “After collecting available information on industrial fibers, the Industrial Fibers working group came to the consensus that hemp was the superior fiber and we turned our attention in that direction.” They felt hemp, due to its bulk, needed to be processed locally. They concluded the most benefit for farmers and communities would come from the value-added aspects of hemp production. Adding value at the local level could be in the form of small cooperative ventures such as spinning and weaving and other means.

Dorothy and other Community Farm Alliance members campaigned for legislative change so hemp could be legally grown in Kentucky. One challenge they faced was the issue of distinguishing hemp from marijuana by the amount of the THC the plant contains, thus making it illegal. The working group proposed that industrial hemp has many uses as paper, cloth, oil, building material, bedding, and other uses. Their hope is that an alternative crop such as

industrial hemp could benefit farmers and communities.

Improving Market Access for Hogs -- Glen Roberts

The Southern Kentucky Swine Association is holding its own these days, gaining market access by converting their breeding herd to leaner genetics.

When the KLAES Project began, the Association had eleven producers,.



representing 1,200 sows The Association used the \$10,000 Kellogg grant to cost share 25 boars.

Producers purchased an additional 75 boars at a

total cost of \$70,000. Some producers also bought leaner females while others used the University of Kentucky gilt scanning program to select lean females from their own herd. This move to leaner genetics gave them ready access to packers.

A local entrepreneur operates a buying station for marketing hogs. This gave them the infrastructure necessary to market hogs, even though it limited producer input in marketing decisions. There was also some concern that producers may not have realized the full economic benefit of their leaner hogs. Hogs were marketed on a live weight basis.

The changes that have occurred in the Southern Kentucky Swine Association reflect the trends in swine farming. Four producers have liquidated their herds of 180 sows. Another producer obtained off-farm employment and reduced his herd by 90 sows. Two new producers, however, joined the group adding 260 sows. One producer is converting from 120 sows farrow to finish to 700 sows farrow to wean. All expansions have been contract production. There has been quite a lot of interest in contract production by new producers. The new producers have been touring swine operations, gaining information to help them decide whether or not to take the next step. There seems to be no interest outside contracts. Glen Roberts, Wayne County Extension Agent for Agriculture says, “Sustainable to these producers means profitability and secure. Sources of financing seem to have the same definition.

We have gone from 11 producers with 1,200 sows to 9 producers with 1,750 sows. We have a net operation of farrow to wean and a net loss in market hogs.” Roberts goes on to say, “One observation that I have is that producers who market their own hogs (while not necessarily more profitable) are more satisfied.”

Producers in the Southern Kentucky Swine Association concur that the need for leaner genetics is what made their KLAES Project successful. What is needed now is a consensus as to where they go from here.

Eastern Kentucky Cattle Council- Larry Clay

Although a newspaper article several years ago described him as a “Kentucky Cowboy,” Larry Clay may be more accurately called a “cow man.” His work with the Mountain Cattleman’s Association and his association with the KLAES Project have the same goals: the development of a viable cattle industry in the Eastern Kentucky mountains, the utilization of reclaimed coal mine areas as pasture, and reliable markets for the cattle produced by his ranch and other Eastern Kentucky cattlemen.

The Eastern Kentucky Cattle Council, organized by the members of the Mountain Cattleman’s Association and the Highlands Beef Cattle Association in 1994, used funding from KLAES to purchase a set of scales and to develop a cattle grazing demonstration. The scale allowed members to group their cattle for sale at a central location, the D& D Ranch, managed by Clay. Most of the project has been undertaken during a period of depressed cattle prices, and the results in terms of profit have been somewhat disappointing, but the ideas generated as a result of the Council’s efforts have longer-term promise.

A visit to D& D Ranch reveals two widely divergent enterprises operating side by side. The cattle are grazing literally in the shadow of a large-scale coal mining operation. The land on which they are grazing was previously mined, and has since been reclaimed. The gently rolling slopes were once steep cliffs and wooded ridgetops. They now grow grasses and clovers and calves. Nearby, large trucks roll

down the winding mountain road carrying coal from the adjacent land presently being mined. The vision of Larry Clay and the Eastern Kentucky Cattleman’s Council is of cattle trucks negotiating these same roads carrying their calves to market.

This project also has a research component. Agronomists and beef specialists from the University of Kentucky’s Quicksand Experiment Station are studying the best management practices for establishing cattle pastures on reclaimed land.

What has been learned from this project? It is obvious that if small farms are to thrive in Eastern Kentucky, livestock will be a component of their operation. The beef herds in the region are mostly small, and marketing will continue to be a problem for the individual producer. If the reclamation of coal mining areas makes larger tracts of improved pasture available, production in the area could increase dramatically. The participation of cattle producers in this project demonstrates an interest in using improved management techniques and a willingness to build on previous experience.

Kentucky Cattle in Kansas--Harrison County Beef Project

One of the reasons for applying for the KLAES grant was to look at alternative methods of marketing Harrison County, Kentucky livestock. In the past, the primary method of marketing livestock was loading them on a truck and hauling them to a stockyard. The farmers in the Harrison County Beef Project realized that they had no idea about the outcome of the sale of their cattle before the sale. After examining several alternatives, the decision was made to send yearling steers to a Kansas feedlot and retain ownership until slaughter.

Thirteen local producers placed five calves each in a Colby, Kansas feedlot. This was the first experience for each of these producers in marketing cattle they owned from birth to finish for slaughter. Each producer paid for net supplies, feed bills, and transportation. At the end of the feeding period, each producer received the grade, yield, and price data for their calves. Fifty-three percent of the Harrison County beef calves graded choice. All animals were sold on grade and yield. In conjunction with the

marketing experiment, the producers received training related to cattle marketing. Four training sessions were conducted with the University of Kentucky specialists discussing hedging for cattle sales and feed purchases.

Several producers have since pursued retained-ownership arrangements on their own and continue to learn the good, the bad, and the ugly of cattle marketing. Other aspects of the Harrison County Beef Project included a radio program of beef trivia designed to raise the awareness of the community concerning the beef business in the county; AgLink, a hot line utilizing a telephone answering machine, allowing producers to buy and sell cattle and hay; and the distribution of pamphlets and videos promoting rotational grazing.

Southern Kentucky Poultry Association

Twenty-one poultry producers in the Lake Cumberland area organized to take a pro-active approach to the mortality and litter disposal problems the poultry industry faces. They developed a database of weights and nutrient contents of the litter. This database gave them information on the quality of the material and the amount they were dealing with. Five mini-composters for dead bird disposal were built, since this approach was more environmentally sound than the incineration method they were using. Gordon Shearer, Clinton County Extension Agent for Agriculture says, “We knew a lot about how to use the litter for fertilizer, but did not know much about feeding it.” So Shearer organized a tour to a poultry-



producing region in northern Alabama for the association members to learn more about feeding litter to cattle. They also sent representatives to investigate the use of kenaf as bedding on another tour to Mississippi. After studying the use of kenaf as bedding material, the group concluded it was not feasible at this time.

The producers found they need storage areas in order to be able to select environmentally sound

times of the year to apply litter to fields or to store it for feeding. The poultry growers, in cooperation with the Kentucky Division of Conservation, built five dry stack sheds for litter storage. Grants from these agencies provided \$70,600 toward the construction of the stack sheds.

Two growers also used Empowerment Zone funds of \$5,000 each to conduct feeding trials. Results of these efforts were showcased in a mini-composter/Litter Storage Field Day and yielded positive public relations with the community.

Shearer credits the KLAES Project with helping the poultry producers learn about the litter waste product and turn it into a means to improve their environmental stewardship and to change a liability into profit for the producers.

Crittenden County CRP Project - Easley Hill Remembered

The Conservation Reserve Program is a federal program that allows farmers to remove highly erodible land from row crop production for a yearly cash subsidy. The original program, which began in 1985, had a 10-year duration after which land was released for the landowners to use as they deem appropriate. Opportunities for enrollment into the program continued for several years. In late 1993, Mr. Easley Hill, a landowner, contacted the Cooperative Extension Service with the question: “How are we going to manage this CRP land when the contracts expire?” A group of Extension specialists formed a team to help farmers answer questions concerning land use and management. This group worked on the project with the Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), and the Department of Fish and Wildlife Service and agricultural industry. The University of Kentucky Extension Service (CES) became the lead agency. FSA agreed to release 160 acres of CRP land for a research and demonstration project on Easley Hill’s farm in Crittenden County. The project dealt with many possible alternatives: crop production, pasture, livestock, forestry, wildlife, and governmental programs, including the economics of these alternatives. A variety of cropping, forage, forestry, and wildlife systems have been implemented the past

two years. Yields have been and will be used to determine best management practices.

This project, being large and extensive, required considerable coordination between the farmers and personnel from the CES, NRCS, and the FSA. A part-time staff assistant was hired to coordinate the needs and the time demands of the farmers, specialists, and the practices required by the project. This included gathering of needed material and equipment, as well as coordinating the efforts of the people involved. The assistant was also responsible for overseeing the reconnaissance survey of the other CRP fields. CES provided funding in the form of two program enhancement grants totaling \$10,000. The Kentucky IPM Program provided \$13,000 in funding over the two years. The KLAES Project grant provided \$10,000. These grants allowed funding for a part-time assistant, as well as supplies, travel, and preparation of educational materials for the project.

A reconnaissance survey of 50 CRP fields in Kentucky was completed in 1995. The survey gathered information on pH, nutrients, diseases, insects, nematodes, and weeds. The survey which was part of the CRP Project, indicated the soil nutrient status of the CRP fields is better than expected and to insure proper fertilization soil should be tested before being placed back in crop production. The survey also indicated that to use a soil insecticide on CRP released land placed back in crop production may not be justified. It is recommended that soybeans be planted first season, since when planting corn the first season an insecticide for use on wireworms and/or white grubs will be needed when planting. This should help to reduce or minimize the use of pesticides on released CRP land.

A number of field days have been held for over 500 people from Kentucky and surrounding states. Farmers, agribusiness leaders, Extension agents, NRCS staff, and others have gathered information that would aid them in making recommendations to farmers when their land is released from CRP.

Another objective of the CRP Project was to foster a discussion of the CRP and policy issues surrounding the use of land released from the program. To achieve this purpose, a "CRP Broad Based Discussion Group" was developed. This group

included representatives from the Environmental Quality Commission, the Division of Conservation, the Kentucky Woodland Owners Association, the Sierra Club, the Community Farm Alliance, The League of Kentucky Sportsmen, The Kentucky Farm Bureau Foundation, the Kentucky Department of Fish and Wildlife Resources, and the University of Kentucky, College of Agriculture Cooperative Extension Service.

The research this year has concentrated on the control of broomsedge on CRP acres and the presence of endophytic fungus in tall fescue. With the conclusion of the CRP Project there will be one last publication with results from all the research gained from the CRP Project.

The CRP Project was recognized by the Kentucky Chapter of Epsilon Sigma Phi with a third place Program Achievement Award in 1996. Mr. Easley Hill was awarded second place Commissioner's Environmental and Sustainable Agriculture Award at the 1995 Kentucky Agricultural Summit and also won an Earth Day Award in 1996.

Easley Hill, who was instrumental in the



formation of this project, passed away in September 1996. He was remembered at the KLAES Annual Meeting in February

1997, when his family was presented a portrait of Mr. Hill. He will long be remembered for his love of the soil and his contribution to Kentucky agriculture.

Pictured are Dr. Lloyd Murdock, Extension Soil Specialist, presenting the portrait to the Hill family: Jerry and Jennifer Little, daughter and son-in-law; and Stephen and Marty Hill, son and daughter-in-law.

Learning from Farmer-Led Research –Mac Stone, Kentucky State Research Farm Manager



The following interview with Mac Stone, Farm Manager, Kentucky State University, describes what they are learning from the monthly field days at the research farm.

Q: How did the Kentucky State University Research Farm monthly field days get started?

A: Keenan Bishop, Lewis Weber, and I were taking weekly walks around the farm and were noticing insects, soil, and weed changes, and we started inviting agriculture specialists and farmers to see what we saw. About that time Marion Simon made an application for a SARE-ACE grant for conducting the field days through December 1998 with the possibility of re-funding.

Our goals for the field day were to create awareness and adjust the attitudes that small niches are okay, that quality counts. More attitude adjustment than just “recipe” management. We do have to be careful not to give recommendations that are not research based. However, we do try to offer different approaches and encourage farmers to figure out what works for them. We’re not all lemmings.

Q: What have you learned from having the field days?

A: Well, we’ve learned that there is a thirst for a knowledge that can be adopted to individual farms. There’s a demand for information that traditional awareness programs do not convey. The real demand is to learn from others, not just the Extension story stuff; not just teaching production but marketing alternatives and other products.

Q: Why is farmer-led research important?

A: The quick turn-around time of answers to questions. Observation data is good enough for farmers to be experimental with different techniques. It also encourages farmers to try to vary their techniques to make their own variations. For example,

people are just mulching tomatoes instead of using plastic sheeting mulch through entire beds. As people start trying things, they start noticing other things going on and open their eyes to other aspects of interactions and their impact.

Q: What directions do you see your farmer-led research heading?

A: It helps us address the gaps in information assimilation and traditional practices and is encouraging more interdisciplinary research.

Q: What are some of the major issues that need to be addressed?

A: We have to be sure that the research being conducted does not have biased objectives or evaluations by accident; for example, transplanting healthy plants into organic plots or unhealthy plants from greenhouses in plots. We need more approaches for data collection to document differences, for example photograph studies. We need more work in business planning for farmers and more personal and professional development for farmers in time management, business management, diversity training, developing production techniques to fill niche markets.

Q: What do you think is driving the interest and work in sustainable farming?

A: People don’t like handling and applying chemicals and fertilizers. People are scared of putting their environment on a program that will crash later. They know they’ve just got to figure out how to do it differently.

Muhlenburg County Beef Project – Billy Hunter

Billy Hunter is a eighth generation farmer on his farm. He describes his farming activities with the Muhlenburg Beef Project as he stands in front of the old home place where he was born. He focuses his energy these days as a volunteer talking about agriculture and farming to school children. He hopes his grandchildren and other children will consider a future in agriculture or at least learn more about farming.

Billy is among several farmers who participated in a rotational grazing project to double

the number of pounds of beef he raise on his farm. They learned how to make their herds more profitable and at the same time reduce pollution. By rotating the cattle in smaller paddocks, cattle stay healthy and gain weight quicker.

A field day was held by the Mulhenburg Grazing Association to educate the community about rotational grazing.

Quotables–KLAES Project Participants

“I believe that future water quality in Kentucky will depend upon how we as landowners adopt best management practices and capitalize on the incentives that are available to the producer for implementation. Of course, diversity, management, and economics will play an important role in agricultural sustainability for future generations.”
- Bo Renfro, Lincoln County Grazing Project member

“The most stated component of sustainable agriculture is environmental impact of any farming system. Possibly the greatest real component of sustainable agriculture is locally-grown locally consumed small farm derived production.” - Ed Fackler, farmer and Kentucky Harvest Festival member



Part II: Taking Stock: Essays on Sustainable Farming Issues

The following essays are presented in the spirit of furthering deliberation and debate about Kentucky Agriculture. The essays do not necessarily represent the views of the College of Agriculture or the University of Kentucky.

The Spirit of Agriculture: Reflections on Economy and Community From the KLAES Project - by Betty S. King, KLAES Project Coordinator & Extension Specialist in Rural Economic Development

The Kentucky Leadership for Agriculture and Environmental Sustainability (KLAES) Project in many ways epitomizes the spirit of agriculture in Kentucky today. This spirit, embodied in the individual KLAES Projects, displays itself as the bonds of generation and place, innovation, democratic traditions and skill-building, environmental stewardship, and, culture and community. What follows is a brief look at what the KLAES Project taught us about sustainable farming.

The Bonds of Generation and Place

Family farming is generational and place-bound. Many of the farmers involved in the KLAES Project represent several generations tied to family farming. Mulhenburg County Beef Project farmer, Billy Hunter shared his homestead with us, recalling stories and showing us the old home place where his family had farmed for eight generations. His concern for the future of farming is focused on educating school children about the role of agriculture and food. He’s hoping his grandchildren will continue his legacy. Family farmers Anne and Luther Mason involve their grandchildren with growing vegetables for the Scott County Farmers’ Market. Lee County farmers, Cecilia Hart and her husband, Tom, and Bourbon County farmer, Susan Harkins returned to their grandparents’ land; but each farm in more contemporary ways, trying new horticulture crops, shiitake mushrooms, and aquaculture.

Others described how they had tried to escape farming as a vocation only to find their way back to the livelihood. After finishing college, young farmer, Ann Bell tried every job but farming before returning home to grow horticulture crops, adding to the

diversity of the established beef, sheep, and tobacco farming underway by her brother, father, and grandfather. As a young man, Bo Gander told his father he'd had enough of farming but after military service and factory work decided farming was the life he wanted and bought a farm in 1991 to dairy. He hopes his son will want to farm someday.

Not unlike the farmers named, many of the KLAES Project farmers have as their goal to just hang on, not only economically but also to survive the pressure from looming housing growth in the countryside. Land does not move as part of the production process in agriculture, and farmers have a unique relationship to place. This farmland relationship places an important role in anchoring families and communities.

Innovation

The individual KLAES Projects exemplify the innovation taking place in agricultural communities. It shows the willingness of farmers to try different approaches, particularly low-cost technologies. For example, the Scott County Farmers' Market farmers have learned to utilize irrigation and mulching equipment to improve yields. The Southern Kentucky Poultry Producers devised composting systems for litter and dead bird disposal. Other projects such as the Southern Kentucky Swine Association and East Kentucky Goat Association learned about artificial insemination techniques and genetics to improve their animal production. Farmer-led research was conducted on fencing and grazing systems. Reclaimed mining land was converted to pasture as part of the East Kentucky Beef Project. Fleming Creek youth conducted water testing and learned to use sophisticated lab equipment. These youth also encourage farmers to implement best management practices. Farmers learned more about integrated pest management and organic horticulture and fruit practices. Environmental practices in manure management were conducted to protect waterways. The KLAES farmers were pioneers in trying new production techniques and practices, exploring new marketing strategies, and developing new relationships outside the farm community.

Democratic Traditions and Skill-Building

The KLAES Project provided a space for farmers to build democratic traditions and learn

problem-solving, public skills, and the value of cooperation. As each group worked on challenges, they gained leadership skills, learned to access additional resources to match their grant funding, developed marketing and networking strategies to increase sales, and managed conflict. The Industrial Fibers Group developed and practiced applied research approaches to become more knowledgeable about kenaf and industrial hemp crops. They learned about state and local government and the political process. Other groups learned lessons from cooperation by sharing equipment and collaborating in pooling cattle or swine to get a better price. The Owsley County Goat Producers and East Kentucky Vegetable Association have leveraged their grant funding to secure support to expand their production and market opportunities. The Harrison County Beef Project examined and tried alternative marketing methods. They tried retained ownership until slaughter and conducted community awareness programs on the beef industry. Commercial and organic growers obtained a better understanding of each other in group sessions and modified plans to accommodate viewpoints in their project. Others learned to tolerate divergent views by understanding the different roles institutions play as educators, advocates, or policy makers. Institutions such as the University of Kentucky, Farm Bureau, and Community Farm Alliance learned to better appreciate their unique roles in agriculture.

Environmental Stewardship

Farmers prove to be the best stewards for the environment because they are closest to the environmental habitats. Mr. Easley Hill recognized the need for conservation on his farm and worked with the CRP program to set aside highly erodible land for ten years. He looked beyond the contract and realized there would be opportunities and challenges when the contract ended. The Conservation Reserve Program (CRP) project members have implemented a variety of cropping, forage, forestry, and wildlife systems on their individual farms. Much of their research has been shared through field days and extension publications. The Apple IPM/Organic Project members and researchers learned it was more difficult to establish apple orchards now than in the past due to higher deer populations, more intense economic constraints on small farmers, and more extreme

weather conditions. Apple and peach insect and disease calendar tables were developed to tell growers when to look for these pests in the field. Other farmers tired and discovered the benefits of rotational grazing for improving herd health and lowering feed costs. The youth of the Fleming Creek Project raised awareness and provide a way for farmers to check their water quality practices without confronting regulators.

Culture and Community

The KLAES Project created opportunities for culture and community-making. The projects provided a focus for groups to learn and share resources. The act of getting the groups together restored the possibilities for reinventing customs and the traditions of farming. For example, the Goat Association Field Day brought farmers with similar interests together. Through this association, ideas and experiences are exchanged and new knowledge is blended with experience. The Ohio Valley Food Festival built new relationships between farmers, chefs, and consumers. The organizers of the festival want to create a culture where people become familiar with their food sources and to support their local economy. Part of this comes from restoring the culture of eating and enjoying food. Community is built through the sharing of resources, such as the equipment used to irrigate and mulch vegetables grown for farmers' markets. The Farmers' Markets themselves attempt to reinvent the culture of local communities. People congregate and support their local economy by buying fresh produce. The results of the community-making in the KLAES Project are expanding. Many individuals from the groups are reaching out and forming a new infrastructure for Kentucky agriculture. They're looking at new ways of organizing for direct sales to consumers by forming a Kentucky Direct Marketing network. The KLAES Project is converging with other efforts for supporting family farms. The Partners for Family Farms organization has formed to call attention to family farms. The Kentucky State University monthly field days have complimented KLAES project efforts and provided a space for farmers to explore alternatives in farming and marketing farm products.

While the experiences of many of the KLAES Project participants give hope and reflect the realities of farming today, there is a sense that those ties are

unraveling. The ties that bind economy, culture, and community are strong, yet fragile. If it is true that "the small farm is the heart of democracy" according to Neil Hoffman, Owsley County farmer, then we must come to honor our strong yearning for a sense of place and look for ways to strengthen the relationship between meaningful work, culture, and our local communities. Farmers and others are beginning to see what some folks consider as constraints on farming as an opportunity for innovation. They are building a community of support that is guided by experience and intuition. They are becoming pioneers in charting new ways to remove barriers in agriculture policy, production practices, food safety, and marketing.

The Future of Farmland and Farming: Protecting Agricultural Land - by Lori Garkovich, Extension Specialist & Professor in Rural Sociology, University of Kentucky

The pressures of urban growth are converting hundreds of thousands of acres of agricultural land to non-farm uses nationally. Kentucky is no different. Each year thousands of agricultural acres, especially those near urban areas, are being removed from agricultural production. This conversion is being driven by the cumulative decisions of individual landowners but often has consequences for the larger community. Indeed, in many communities throughout Kentucky, bitter conflicts have developed as neighbors argue with neighbors over the proposed development of farmland. Should communities act to encourage the protection and preservation of farmland? Several reasons have been offered to justify this effort: the need to protect groundwater recharge areas, the importance of scenic open spaces for tourism and community quality of life, and the economic costs of urban sprawl.

Yet the importance of any of these reasons depends on the value we bring to their consideration. Answering the question, "why should we preserve or protect farmland?" requires a community to make choices about values such as private property rights, personal freedom, environmental quality, equity and fairness. It also requires community members to consider what aspects of the landscape, economic activities, and land use make up their sense of community identity and quality of life.

When a community begins to consider whether to protect agricultural lands and if so, what is the best strategy, it is moving into the question of values. We often discount the importance of values in discussions of public policy. Too often we assume that data will tell us what is the best choice for public action. However, most points of disagreement in community discussions on land use issues come from either differences in values or a failure to recognize that such differences exist.

Values are beliefs we hold about what is right or wrong, appropriate, or desirable. They shape our attitudes toward strategies for action. Land use decisions involve several important values that influence how people react toward growth and change. Some values that come into play in land use decisions include: property rights, personal freedom, fairness and equity across the generations, environmental quality, the proper relationship between government and its citizens, and quality of life.

A consideration of the values underlying different choices for action does not point to which policy option is desirable or right. But choices that conflict with the basic values of citizens will face stiff resistance. Having a better sense of our own values or those we disagree with will improve decision making.

How community members define what is right, appropriate or desirable also influences the strategies for protecting farmland they are willing to choose. Four programs – agricultural districts, agricultural conservation easements, land use planning and urban service areas, transfer of development rights – emphasize different sets of values and lead to different public and private costs and benefits.

Dealing with land use changes, especially as they affect agricultural lands, is never easy. It requires that communities and citizens make tough choices. What is certain is that if communities do not consider the question, “Should we protect agricultural lands?” the loss of productive agricultural lands to urban development will continue.

The Green Revolution(s) in Agriculture - by Larry Swartz, *KLAES Farmer Coordinator*

Divergent views and values underlie the state of agriculture today. Two articles in *National Geographic* magazine contrast the American values

and visions of agriculture over the last 25 years. While one article was penned in 1970 and the other was written in 1995, both had reference to the “revolution” in agriculture. What follows is a comparative analysis of the “revolutions” in terms of the underlying values and perspectives currently in conflict in the American countryside.

The two articles present a contrast between two visions of agriculture. One views farming as a scientific, technology-based production system versus another view for farming as a sustainable, ecological system. The December 1995 article titled “A Farming Revolution: Sustainable Agriculture” described sustainable agriculture as “back-to-basics movement [that] is shaking the very foundation of agribusiness by getting impressive yields with few chemicals.” There is some irony in that statement which is reflected in the title of the 1970 article, “The Revolution in American Agriculture: More Food for our Multiplying Millions.” This story celebrates the onset of chemically aided, industrialized farming.

One key difference between the two stories is the approach taken by the respective writers. The author of the 1970 article does not mention a farm background or any previous knowledge of farming and appears to be in awe of the scale and the technologies he encountered during his research. The author of the 1995 article begins by relating a story about seed-saving by his grandfather, an Iowa farmer. His article reflects an understanding of farming that only someone well acquainted with the farmer’s dependence on natural cycles could have. His article dwells extensively on the people involved in agriculture, as opposed to the fascination with science and industrial techniques found throughout the earlier piece. For example, the 1970 story article has paragraph headings such as “Farmer’s Magic Touch: Fertilizer, Machines Multiply Farmer’s Output,” “Science Lessens Chemical Hazards,” and photo captions such as “Factory in the Field.” By contrast, the 1995 story asserts “. . . the true agricultural technology is the knowledge of the farmers, slowly accumulated.” Perhaps the greatest distinction between the two articles is found in their underlying themes. These are basically the same issues that we find in a comparison of today’s conventional or orthodox agriculture and the system we so far, for the lack of a better term, refer to as sustainable agriculture: specialization and

diversity. The chart at the end of this essay contrasts the views of agriculture from the articles.

Both pieces attempt to capture their respective revolutions at a critical stage. Both are hopeful in their assessments of the potential of the systems they describe. The author of the earlier article, however, seems somewhat apprehensive. Although seeming to accept the predictions of the farm experts with whom he has consulted regarding the future of agriculture, he asks rhetorically, “why, then, would anyone want to farm?” The author of the 1995 article closes with a quote from a North Dakotan farming 2600 acres organically: “I wish I was at least 40 years younger. There’s so many things I want to do.”

The most telling difference between the two revolutions in agriculture is visual. Both articles contain artist’s illustrations of their characteristics. The earlier article depicts the 1970’s conception of a farm of the “early” 21st century. It shows “cattle pens resembl[ing] high rise apartments,” a remote controlled tiller-combine, a jet-powered helicopter spraying insecticides, and “illuminated plastic domes provid[ing] controlled environments for growing high-value crops.” Presumably, insects have managed to penetrate the “controlled environments.” The 1995 illustration titled “Cycles of a Sustainable Farm” features “healthy soil, crop rotations, “public-spirited” farmers, purer rivers and drinking water, and a “cornucopia of organic produce.” Both artists obviously took some liberties to idealize their subject, and the jury is still out regarding which “revolution” will ultimately prevail, but I believe I prefer the promises of a progressive and sustainable agriculture to the grim renditions of beef packed “into cylinders for shipment to market.” Hopefully, the revolution has begun.

A Contrast of Views of Agriculture

1970 Scientific Farming

“Taken seasons out of the calendar”

“The revolution is just beginning”

“Agricultural advances that free the people from the drudgery of limited production on the land”

“We’d have to develop a plant to fit the machine”

“The computer, the progressive farmer’s almanac”

1995 Progressive Farming

“there are not golden ages in farming”

“the true agricultural technology is the knowledge of farmers, slowly accumulated”

“after WWII, production became the sole measure of a progressive farmer”

“the practices of the new farmers who resisted the technological sea change of the trend toward chemical, industrial agriculture - now look revolutionary in turn.”

“there is no single approach to sustainability”

Conflict is Okay - Ron Hustedde, *Extension Rural Sociologist, University of Kentucky*

It was easy to predict that the KLAES Project would lead to conflict. First, the Kellogg-funded project called for agricultural groups and individuals that weren’t accustomed to working together to cooperate. The usual anxiety about new networking relationships got more complicated because some groups and individuals in the project didn’t fully trust or understand each other due to a history of negative communication patterns and misunderstandings. Some groups within the project had internal divisions with several spokespersons. Second, although there was significant cooperation in designing the Kellogg grant and many shared values, there were differences about what values should be emphasized. Some

wanted to emphasize the preservation of the family farm or alternatives to tobacco. Some placed more value on ecology or for major institutions to change. In efforts to get along with each other and carry out the project, participants didn't always talk about the question of emphasis. So, one could predict disappointments along the way about how aspects of KLAES were carried out or the outcomes that emerged.

You might think I'm painting a negative picture about KLAES or sustainable agriculture. For the most part, I think project participants dealt with the conflict creatively and in a civil way.

Anticipating Differences

When KLAES was launched, project leaders anticipated differences. About twenty people from groups such as the UK College of Agriculture, Farm Bureau, the Community Farm Alliance and the Commonwealth's Department of Agriculture explored difficult questions such as "What concerns do you have about each of the groups participating in the project?" or "What needs to be changed for groups to trust each other?" The questions led to tears and opened some old hurts among individual leaders. But it also created a climate in which people could talk with each other about their differences in a respectful and civil way.

Conflict Resolution Skill-Building

People can build their resolution skills in many ways. The best is through practice or watching other people do conflict resolution. At least three groups within KLAES clashed to the point where they asked for neutral third parties to help them address their differences. The neutrals created a safe climate to discuss problems and to move disputants into creative problem-solving. In the three cases, the conflicts led to solutions that everyone "could live with." As one of those neutrals, I saw some new attitudes emerge about conflict. It doesn't have to lead to deadlock or win-lose situations. As a consequence of conflict resolution, some project participants and leaders are strengthening their conflict resolution skills through everyday practice or attending workshops.

KLAES participants had the opportunity to take a one-hour workshop in conflict resolution at the beginning of the project. Needless to say, that one-hour session did not build skills. It merely served as an introduction to the topic. It would have been ideal

if a small core within KLAES could have gone through an intensive one or two-day conflict resolution training and then attempted to practice it in the field and come together to reflect on what they did. Then there would have been more long-term impact.

So what?

The KLAES Project has set a tone for dealing with conflict. In many subtle ways, it has taught people they can have a relationship with each other even though they don't see eye-to-eye. I think that's a significant step for the groups who are working on Kentucky sustainable agriculture from a variety of angles and value bases. In the changing world of agriculture, the groups must communicate clearly with each other.

What's next for sustainable agriculture?

More conflict is the answer. Hey, it's part of being human. Not everyone sees tobacco, large-scale poultry and hog operations or the preservation of the family farm in the same way. There's tension between farmers and urban residents who move into rural communities and don't like farm smells, sounds, or chemicals. The list goes on and on. The important thing is that advocates find a way to communicate with each other and to creatively explore how their needs and interests can be met. We need to find ways to strengthen conflict resolution skills among the different groups that influence the direction of Kentucky's sustainable agriculture. When things get rough, I would like to see teams of neutrals have the abilities to work with groups of disputants to resolve their differences. The Cooperative Extension Service agents may be able to play that neutral role. That's what I think is next.

Hemp: Throw Me the Lifeline!

-- by Valerie Vantresse, Research Associate, Department of Agricultural Economics, University of Kentucky

In the summer of 1997, the chairman of our department asked me what I knew about industrial hemp. After we both proclaimed ignorance, I set off to describe the world hemp market, independent of the Alternative Fiber Group KLAES Project effort. What I learned surprised me. Despite my efforts at neutrality, I soon found myself the enemy of many hemp supporters and cast in with the anti-drug advocates. Probably one of the most “liberal” researchers in our department, I did not savor finding myself on the side of institutional rigidity. So, what did I find out about hemp?

Despite many hopes and presumptions, the world market for industrial hemp fiber and oil continues to shrink. World trade in hemp fiber is currently less than \$5 million and oil less than \$7 million. With an annual tobacco crop a little under \$1 billion in Kentucky alone, hemp does not appear to be a ready-made alternative. Further, fiber and oil production is dominated by low-cost producers (primarily China, South Korea, and the former republics of the Soviet Union) and the European Union which provides hefty subsidies to its farmers.

Most pro-hemp advocates have encouraged further agronomic research on renewed hemp production in the US. I believe this is a misplaced effort. Hemp can be, and is, grown all around the world in a variety of climatic and agronomic conditions; and the French have worked diligently to preserve and improve low-THC varieties over the years. Of course American farmers can grow hemp - and we could do it well!! But that is not the challenge the hemp industry faces. The barrier is found in processing costs as hemp oil and fiber processing technology has lagged behind. Hemp remains a high cost alternative to other natural fibers (cotton and soybeans for example) and synthetics (polyester and petroleum-based lubricants). If we are to invest research and development money into the hemp industry, we need to focus on processing technology.

So what have we learned from attempts to legalize industrial hemp?

** Divergent bedfellows do not always sleep well.* The hemp issue has brought together an unlikely consortium of farmers looking for production

alternatives, environmentalists, pro-marijuana types who see hemp legalization as a stepping stone, and those concerned with the viability of our farm sector. This was an effective consortium in many respects and the virtues of hemp were widely publicized. But many of the “more conservative” advocates were not entirely comfortable with the “liberal” backers. Thus, each cluster made attempts to isolate it from the other.

On the other side, anti-drug groups (DEA to DrugWatch International) tried to align themselves with the universities and other state and federal government agencies, which in general did not want to enter into the hemp debate because of the confusion with marijuana. While many researchers understood the distinction between the two types of cannabis sativa, administrations were faced with a public appearance challenge. Many administrator hoped that the hemp issues would just dry up and blow away.

**If it acts like an ostrich, it probably is.* To avoid an extremely controversial subject, many universities and other institutions (including USDA and state agriculture departments) avoided the hemp issue as much as possible. The “progressive” pursuers of crop alternatives saw this as yet one more indication of lack of institutional support for farmers interested in enterprises outside of the basic commodities. Further, many of these institutional doomsayers gave the appearance of open-mindedness, while hiding behind vague statements of partial-truths. Would academic freedom have been squelched had university research supported the pro-hemp advocates? Ironically, the very research that was feared later proved to be a valuable arsenal by university administrators who now had more information to address the hemp issues from a factual perspective, and not an emotional one.

** Who should be responsible for developing agri-processing technology?* The biggest constraint to developing industrial hemp as a commercial crop is not the production side. What the industry needs is new processing technologies to enable hemp to compete with other substitutes. How much should the land-grant system invest in developing agri-processing technologies? Where should private-sector research step in?

**Be wary of those who lie through omission.* The hemp controversy was clouded with mis-truths and half-truths - sometimes through design and sometimes through ignorance. A perfect example revolved around the issue of whether hemp growers would try and hide marijuana production in the same patch. Hemp opponents said yes - the plants look identical. Hemp proponents said no - marijuana growers would not want the plants to cross-pollinate and lower the THC content of their pot crop while increasing the THC content of their legal hemp crop. The truth is that hemp grown for oil and seeds looks remarkably like marijuana (with the usual slight varietal differences) and has the same plant spacing, etc. Hemp grown for its fiber is planted very closely together and is essentially all stalk. Hiding marijuana plants among hemp fiber plants would be impossible.

With regard to THC content, cross-fertilization would occur. But in the first generation, THC levels would change only slightly. It would be the second generation that would exhibit those alterations of characteristics. As long as the hemp and marijuana growers used “fresh” seed, cross-pollination effects would be minimal.

** “Illegal” crops can make good legal cash crops.* Australian poppy seed production (used in baking, etc.) is an excellent example of where strong government regulation can facilitate the production of an illegal crop (poppies are also used for opium production) for legal purposes. “Should industrial hemp production be legalized?” is a very different question from, “Would industrial hemp make a good cash crop for farmers?” and a positive answer to the first and negative response to the latter are not inconsistent.

So, where will the hemp controversy go now? While the US government recognizes industrial hemp as distinct from marijuana from an international stance, no efforts are being made to legalize hemp production at the federal level. State efforts have virtually been nixed with the exception of Vermont and a few others. However, with recent legalization in Canada there does appear to be continued impetus to explore alternatives.

Industrialized Farming - Is a Trap or a Springboard? - Lee Meyer, *Extension Livestock Marketing Specialist, Department of Agricultural Economics, University of Kentucky*

The industrialization of agriculture has been a contentious issue throughout the U.S. for the past several years. Much of the concern about “factory farming” has been outside Kentucky’s borders, though the potential entrance of large hog operations brought the issue home through environmental concerns. Often those concerned about changing agricultural structure are seen as trouble makers. Word choice labels the speaker or writer. When I wrote “factory farming”, you probably immediately thought that I was against large scale agriculture. If I had used a term like “vertically coordinated farming” you probably would have gotten a very different impression (and also been somewhat confused).

My personal definition of industrialized agriculture focuses on two characteristics. One is the adoption of practices normally used in large commercial enterprises, typically building on economies of scale and specialization. The second characteristic is size and expansion - sometimes expanding by doing more of the same thing - (like finishing more hogs) and sometimes by adding more steps (like feeder pig production and processing).

Why is agriculture becoming increasingly industrialized? Try this list: reduced cost of production and processing; consumer preference for simple, generic foods; labor management; simplicity that comes from assembly line type routines; farmers’ search for low risk alternatives. Many criticize these reasons, but from individuals’ views, each is realistic. It is difficult to fight general consumer trends. So, the demand for chicken sandwiches at fast food restaurants and boneless pork loins - that is driven by all of us - builds the demand for the products of an industrialized system.

Now, with that as background, what have we learned about the industrialization of agriculture through KLAES? The KLAES Project brought us closer to discussion about the industrialization of agriculture, but did not put us right in the middle of the issue. Kentucky farmers are on both sides of the issue. The poultry industry is the stereotype of industrialized agriculture. Some see the entry of this

industry into Kentucky as harmful to their preferred type of farming. Contract farmers are removed from decision making. Company managers control the farmer's enterprise. Others see chicken houses as a way to diversify. Farmers who invest in broiler houses may not earn a high wage, but the steady income may allow them to expand into riskier enterprises like crop production. And some family members see it as an "off the farm job, on the farm."

To me, this experience has challenged us to build a new model, taking what we've learned about various farming systems. Many are trapped in the industrialized agriculture wars. Discussions focus on taking sides. Blame and accusations are spread. As a result we have become polarized and progress has halted.

Building a new model is already underway. Questions like: "Are there ways farmers can take advantage of the demand for the products of an industrialized industry while maintaining the positive characteristics of independent farms?" can guide us. The Wayne County hog producers are trying to learn more about group marketing and improved genetics. They can then sell to the large processors (who see them as having the characteristics of larger operations). The Clinton County poultry group is moving forward on using chicken litter as an income source. Are these end goals? Probably not. Even if successful, these two groups may be subject decisions made outside of their reach. But if they work on a longer run vision, stable sources of income now can be used to build toward alternative enterprises and a more sustainable food system.

In the longer run, industrialization may create opportunities for astute farmers. Industrialization generally leads to high volumes of low cost, generic products. Many consumers prefer food products best produced and delivered by local producers. For these markets independent growers can out-compete the industrialized system.

Another advantage of local food systems is that they combine agricultural production and environmental management. Small scale, independent agriculture "produces" an aesthetic rural environment valued by the broader community in addition to food. In Europe and parts of the U.S., creating local food systems has emerged as a cost effective way to

support independent farmers, rural communities and to meet environmental objectives.

The industrialization of agriculture is a challenge. There are pro's and con's, but most people say they prefer an independent agriculture, though at the same time they spend their food dollars on cheap food products. Most folks I talk with have resigned themselves to the "inevitable" outcome of mass production agriculture. However, we have learned that there are reasonable alternatives, so if Kentuckians really want community-based agriculture there are options to pursue and create.

KLAES and Rural Communities: Creativity and Commitment - *by Mike Score, former KLAES Coordinator who now works as an Extension agent in Michigan*

The KLAES Project represents a collection of goals in a plan to make farm systems more sustainable. As project coordinator during 1994 to 1996, I've seen significant outcomes that have resulted in positive change for participating communities. The pulse of the KLAES initiative has always come from the creativity and commitment of participating community members. The Ohio Valley Harvest Festival, for example, was able to overcome logistical challenges and internal conflict in creating a forum for interaction between farmers and non-farmers that is worthy of being considered a national model for strengthening farm communities. Wayne County interest in recreating a place in the market for smaller scale pork producers required a commitment to deepening production expertise, and a great degree of patience and diplomacy in relating to competitors in the current market place. The industrial fibers group had to balance the diverse interests within their network while calling for bold and risky cooperation from the Land Grant Universities and elected officials on work that is portrayed as controversial.

Where does all of this creative energy and commitment come from? I believe it grows out of a very deep commitment to nurturing rural communities. The economic and environmental consequences of the decisions we make regarding farm system management will have impacts on our farm community heritage. Without effective community initiatives our farms will be converted to other uses. Without innovative

marketing we will move from a community of family farms to a system of integrated production and management. Without improved environmental management we will have to face future generations having contaminated their wells and having created health and environmental hazards.

The relationships of organizations and institutions in the Kentucky farm community proved to be a more difficult knot to untie. Community organizations and institutions represent the average of our diverse interests. Institutional employees and organizational memberships are bound to act within existing policies, budgets, and previous long-range plans of work. Because of this, local groups were often frustrated by the barriers that seemed to be created by service providers. It would be discouraging and perhaps inappropriate to compare progress made by participating communities and the organizations making up the Project Management team. A fairer comparison would be to compare Kentucky farm communities with those in neighboring states, and the Kentucky farm organizations and institutions with others in the region. When this is done, it seems clear to me that while communities are making improvements at a faster pace than institutions and organizations, the state as a whole has moved more quickly toward developing sustainable agricultural plans with the KLAES Project than it would have without KLAES.

One of the next challenges will be exciting other states within the region about changes that have occurred through KLAES networking, and overcoming interstate rivalries to lay the groundwork for regional collaboration.

Sustaining the KLAES Project - Hal Hamilton,
Director of the Center for Sustainable Systems

What's different as a result of KLAES?
What's to come? First, what's different?

Quite a bit, I think, although it's mighty hard to separate KLAES from everything else that is related to it. Lincoln County dairy farmers are saving on their feed bills through managed grazing. Kentucky's organic farmers now have their own association, they have more technical advice from the university, they have increased marketing opportunities, and they have monthly field days. Some land coming out of CRP is

better protected. Poultry growers in Clinton and Wayne counties are saving money and protecting water quality. The list goes on.

The Harvest Festivals have drawn 13,000 people and are heading toward permanence, strongly supported in Louisville by the Farm Bureau. Who gets the credit? Sue Weant, Sarah Fritschner, Susan Harkins, Dawn Ripley, J.K. Henshaw and a lot of other people get credit, and KLAES helped get it all going, but the energy behind the Harvest Festivals has a momentum of its own.

One of the lasting benefits of KLAES is that we're learning to forget to claim credit. Curtis Absher calls it "getting to we". At one point in KLAES, for example, UK took its brand off KLAES publications.

Karen Armstrong-Cummings at the Kentucky Commodity Growers plays an active role in carrying the KLAES momentum forward. Karen is a spark plug for lots of activities - she is heading up a new loan/grant fund for farmers. She is sponsoring a training institute for farm businesses, and she is now spearheading Partners for Family Farms to connect farm folks with urban partners.

Betty King, who took Mike Score's place as KLAES coordinator, continues at the Department of Agricultural Economics at the University of Kentucky. Her job enables her to support KLAES related activities.

For me personally, KLAES marks an important turning point. I used to view the university and Farm Bureau as representative of what is wrong with agriculture. I assumed that they all believed in the messages of "get-bigger-or-get-out, replace people with technology, value your neighbor's farm more than your neighbor, keep pushing down prices to make farmers more 'efficient'. Many people still seem to hold these assumptions, but I now know that there are many, leaders in the university and Farm Bureau who share a commitment to family-farm agriculture and rural communities. I've learned and grown a lot during this project, and I have a whole lot more friends and colleagues now that I've gotten past seeing them as competitors or enemies.

Many of us believe in family farms and rural communities. But we're all uneasy about the future. We feel uncomfortable that we might be swimming against the current of inevitability. Those of us who want to create a better future face a difficult task. We

need to change attitudes, we need to improve the way we farm, we need more value-adding businesses, we need to rebuild community, and we need to reform public policies. I now feel, however, much less alone than I did before KLAES. I now know that I have allies in every major agricultural institution and organization in Kentucky.

We need to continue learning from one another, keep open minds, and support the growing momentum for our family farm system. As tobacco's future becomes more uncertain, we should remember that the tobacco program was never really about tobacco; the program has always been about people and communities. Sustainability is about three things: people, community, and environment. We need to make a living in such a way that all three are sustained. KLAES made a contribution. Let's keep at it together.

Charting the Future for Kentucky Agriculture- *by Deborah Webb, Director, Community Farm Alliance*

The United States is in the midst of some of the most dramatic social, economic, and demographic shifts in its history. These changes include a shift away from our traditional family farm system of agriculture to a corporate system of agriculture. Increasing political power by these same corporations as we enter a global economy often leaves local communities powerless to effect their own future. There is a pervasive cynicism about the political process in our society. For those who are being left behind - those with the least amount of power and access in society, including people who make a traditional living from the land - this is a historical moment. As Kentucky faces the demise of its number one cash crop, tobacco, Kentucky farmers are busy trying to envision and create an alternative sustainable system of agriculture.

Against this background, the Kellogg Foundation created the Integrated Farming and Food Systems Initiative. Eighteen collaborations from around the country were funded to strengthen sustainable agriculture. In May of 1994, Community Farm Alliance and the University of Kentucky's College of Agriculture became project partners in a new endeavor. The KLAES Project was born.

The purpose of the project was to increase the sustainability of farming systems in Kentucky by

creating an interactive, problem-solving network of farmers, Extension personnel, researchers, and other organizations. Has the KLAES Project succeeded? Is there a network of farmers, Extension personnel, researchers, and other organizations working to further sustainable agriculture in the state?

I believe the answer has to be yes. Is the work finished? I believe the answer is no. As the KLAES Project ends, the task of creating a new kind of agriculture is just beginning. Our tobacco economy is changing, and industrial agriculture is beginning to move into the state. If small family-run farms are to remain viable, we must create a new kind of agriculture and we must do it together.

Farmers are on the front line. We are at the crossroads as a society. A safe, stable food supply can be guaranteed only by a system that nurtures family farmers and locally grown food. We have a choice. We can continue the present course and industrialize our food production; or we can reinvent agriculture to protect farmers' incomes, their children's future, the land and a way of life. Those who participated in the KLAES Project made a choice. Farmers, their neighbors and communities like those who participated in the KLAES Project are pioneers in discovering the future.

Sustainability is not just a nice concept. It is a matter of survival. Diversification, creating local markets, finding innovative, inexpensive methods of production is no longer a hobby for the curious. Creating a sustainable agricultural system in Kentucky is a race for survival.

I applaud all of the people who came together in KLAES for their efforts. Let us all stand together for four more years, and four more years after that, and for as many years as it takes to create the kind of agriculture that protects people, the land, a cherished way of life and our future.

KLAES: REFLECTIONS-IMPLICATIONS

-by Curtis W. Absher, Assistant Director of Cooperative Extension Service for Agriculture and Natural Resources, University of Kentucky

Several years ago when the opportunity to be involved in the Kentucky Leadership in Agriculture and Environment sustainability Project, I chose to

devote a considerable amount of time to it for several reasons.

First of all, I have always felt a need for agriculture to be "sustainable" in respect to the common definition of the term. Secondly, I have recognized the value of on-farm demonstrations and the value of interdisciplinary teams of specialists working on problems and opportunities. The third opportunity that seemed evident was that of working to build bridges and ties with many of the agriculture related groups in Kentucky. Therefore, I saw the KLAES project as a chance to explore the factors that contribute to the sustainability of agriculture, to obtain greater support for interdisciplinary teams and demonstrations, and, to seek common ground among agricultural organizations.

Definitions

My first realization was that "camps" had already developed around the definition of sustainable agriculture. "Sustainable" had become a code word in the minds of some that represented what they wanted to advocate or resist. While most agreed that the definition contained components relative to profit and environmental stewardship, the arguments over the definition generally came from a view that sustainable agriculture emphasizes profit that puts the environment at risk or environmental stewardship that puts farm profit at risk. Then the part of the definition that comes from Congressional legislation that adds "socially acceptable" contributes to the confusion. I have reduced that in my mind to the need for community connectivity.

After hearing too much debate over the definition, I have come to my own simplified definition sustainable agriculture is agriculture that lasts. It has to have a balanced emphasis on farm profitability, environmental stewardship and farmers having a shared role with non-farmers in influencing the community life. And while many of my colleagues have suggested we find another word, I maintain that the deliberation over whether a practice, program, or policy is sustainable is a healthy mental exercise. That translates to me, "will it last on its own" or does it contribute to the stability of farming and the benefit on society. It also seems evident that farm profitability, environmental stewardship and being connected to community are linked by and's and not or's over time? Thus, the expected outcomes

from sustainable agriculture should be: farm profitability and environmental stewardship and community enhancement.

Teams and Demonstrations

While the KLAES program management team thought that Integrated Working Groups (IWG) would be created to handle problems, the request for proposals went to local groups. After 14 groups were selected it appeared that the IWG model was not appropriate in all cases. Only one, the Conservation Reserve Program (CRP) project had an on-going IWG around which the project was built. But of course, this IWG proposed the project. In most of the other projects the technical aspect was not the major barrier, or if it was, the need was supplied locally, or the local agent or someone dealt directly with the specialists on an as-needed basis. Thus, the IWG functioned more as a flexible network of resources coordinated by an Extension Agent, a school teacher in one case, representatives of a public or private agency, or a volunteer. The capacity of local groups has been increased by purchase of equipment and its demonstrated use. This includes such items as raised bed makers, water wheel setters, scales and artificial insemination equipment for cattle, swine and goats (the specifics are described elsewhere in the publication). But the most effective demonstration has been the results of people working together to overcome a barrier.

Common Ground

Almost concurrently with the start of the KLAES project was a program by the U.S. Department of Agriculture to get all states to do a strategic plan for sustainable agriculture for Cooperative Extension. That conveniently meshed with a component of the KLAES Project that provided for a similar plan to be developed for and by the Kentucky Department of Agriculture. A series of focus groups were organized across the commonwealth. A list of barriers identified by the AgPlan 95 process: were marketing, diversification, and value-added opportunities, public policy, capital and credit availability, quality of rural life impairment, to stress associated with access to health care and other expectations of society; and inter-farm group cooperation.

While the charge was to develop a strategic management plan for sustainable agriculture, the

result was a plan to develop a sustainable system for managing educational and program needs of agriculture. The list of barriers collected in 1995 was considered the "first" list.

County Agricultural Development councils had been developed as early as 1988, and similar organizations go back many years in some counties. But from AgPlan 95, area and state Agriculture Advancement Council, Incorporated evolved. The Ag Advancement Councils will be on-going entities that will prioritize needs of agriculture producers at the county, area and state level. The councils will also provide a mechanism for dealing with barriers at all these levels.

Implications:

There are a number of programs and activities that relate to sustainable agriculture as well as the KLAES project. They include the Agri-21 program, partially funded by the Tennessee Valley Authority; the various Sustainable Agriculture, Research, and Education/Agriculture In Concert With The Environment; (SARE/ACE) and a couple of USDA Initiatives; "Managing Change in Agriculture"; and "The Fund For Rural America". Spin-offs from the above were the Integrated Farming System cluster group meetings and participation in the Salzburg Seminar #353 on Sustainable Rural Development.

During part of that time, the USDA sponsored a committee that produced "Vision For The Future: A Strategic Plan For Agriculture" and an implementation team for the plan "Shaping The Future: Extension Education In Natural Resources and Environmental Management". This report produced outcomes that might be expected at the farm, community and societal level. Those outcomes are listed below.

OUTCOMES

I. Farm outcomes

- A. Farms that are profitable and stable over the long range
- B. Farmers who use practices and enterprise mixes that will optimize income while minimizing environmental impact
- C. Farms that are less vulnerable to risks
- D. Agricultural production that conserves natural resources and avoids contamination

- E. Producers who understand societal concerns relative to food and environmental quality and employ practices that will help achieve these expectations
- F. Orderly transfer of farm business from generation to generation
- G. Producers who understand and produce for a global market economy
- H. Farms that are safe and healthy places to work and live
- I. Farmers who are involved in community decision making
- J. Farms that use sound employer / employee practices

II. Community Outcomes

- A. Enhanced interconnectedness between agricultural sector and rural communities as wholes: economically, environmentally, and socially
- B. Increased self-employment opportunities and higher levels of income in agriculture-related rural enterprises
- C. More supportive rural infrastructure of communication, transportation, marketing, and inputs for agriculture-related enterprises
- D. Agriculture supportive of rural communities through viable moderate-sized, owner-operated, family farms and natural-resource-based rural enterprises
- E. Greater contribution of farming families to local institutions, schools, churches, health care, and local government
- F. Communities that are more supportive of farming and the people who are employed in agriculture-related enterprises
- G. Greater compatibility and complementary of agricultural resource use and quality of life in rural communities
- H. Enhanced leadership ability and productive capacity of people engaged in agriculture-related enterprises in rural areas

- I. More communities that include agriculture in self-development strategies for sustainable community development
 - J. Communities that value diversity and capitalize on positive aspects of differences among people in building stronger communities.
- II. Societal Outcomes
- A. An agricultural system that provides an adequate supply of safe and wholesome food and fiber at a reasonable cost
 - B. An agricultural sector that is sensitive to changing environmental, economic, and social expectations
 - C. Greater public understanding of, and appreciation for, constraints, challenges, and opportunities confronting production agriculture
 - D. Public policies that support social and economic systems which afford individuals opportunities to achieve their desired level of living and quality of life
 - E. Public policies which assure that people's basic food and fiber needs are equitably met
 - F. Public policies that address the necessity of competing in a global market
 - G. Mutual understanding of the interdependence of agriculture and society.

While the foregoing was not an activity specifically identified as being related to sustainable agriculture, the expected outcomes are consistent with agriculture that "lasts".

I have been challenged to think about the implications for the Cooperative Extension Service. Referring again to "Shaping The Future" a vision statement was developed that "The Cooperative Extension Service will be the informal education organization of choice, which will provide the leadership that empowers people to solve problems and realize opportunities through customized agriculture-related programs."

The bold faced words seem to be the key:

Informal Education - reminds us of our main mission: education; **Of Choice** - implies customer driven, user friendly, programs; **Leadership That Empowers** - means that the capacity of individuals

and groups increased the knowledge and its application; **Customized** - means that programs need to ultimately lead to specific rather than generic application.

The "Vision For The Future" document summarized eleven recommendations for Extension as follows:

1. Perform new functions in new ways
2. Act as a "learning organization"
3. Become sufficiently flexible and open to change to truly address needs of people and to determine what the System can and will do
4. Assume a responsibility to use its human and electronic networking capacity to empower people to solve problems, fulfill needs, and create new opportunities
5. Help society and the production sector recognize the true value of agriculture to society, communities, and families
6. Help people make sense of the deluge of information, answer policy questions, and link researchers to users; offer more analysis and interpretation of information rather than simply providing information
7. Mediate the impacts of technological changes on farming systems and on processing and distribution of food and fiber
8. Develop a reputation for valuing people's differences and aligning the way the CES does business to creatively incorporate these differences into program planning and implementation
9. Facilitate understanding among people of diverse backgrounds so that common ground is discovered on which to build joint ventures to advance the needs of society related to agriculture
10. Introduce clientele to the international arena and help them adapt to the changing world order
11. Assist the agriculture sector to deal with environmental issues using knowledge generated by the research community.
12. This poses the question of how does the Kentucky Cooperative Extension Service respond to all of these voices.

The first two of the eleven recommendations seem to be pivotal to responding to the remaining nine. Therefore, let us first look at the #1 recommendation: "Perform new functions in new ways". This implies transitions. I have outlined the major transitions that I see the Cooperative Extension Service must make or has made to keep Extension relevant to meeting the informal education needs. Six essential transitions follow:

Centers to Networks: It has been popular over the last several years to establish Centers Of Excellence. The transition is from geographic "centers" to networks; contacts that you make to get information or programming assistance - that have no regard to geography. E-mail and Internet are new vehicles for networking and access to information.

Distribution to Access: Extension has grown due to its ability to create information and distribute it to users. Now, with the information explosion, people are flooded with information but information that is most useful to them is that which can be obtained when they need it and in a form that they can readily use. Publications on CD-ROM and available on web sites is only one example of how we are making this transition.

"Concurrence to Empowerment: Extension educators have been trained in subject matter and process skills. Extension has always sought leader involvement in program development. Extension is no longer sufficient leader involvement. We must move to empower Extension users. One description of empowerment I have read is to get people to use their "ace's". "A" is for attitude, "can do!"; "C" is for creativity; and "E" is for experiential. Thus, with a positive attitude, new ideas can be applied on an experimental basis. Leaders need to be involved in problem determination, program planning and evaluation. Simply having the "right" answer is no longer enough! This relates to point two (2) that Extension can act as a learning organization.

Cooperation to Collaboration: This means more than just getting along well. This means

partnering early in an effort. Cooperation can be polite coexistence; collaboration means working together to the point that you can agree and disagree and still keep working together. The KLAES project is an example of this as we have worked to develop projects. If we are to "thrive" we will be doing more collaboration. This also means that we need to be able to make a transition from interdisciplinary programs to disciplinary ones.

Recommendation to Education: Extension agents are often asked "what does U.K. recommend?" Some recommendations need to be made but Extension's goal is an educated clientele that makes their own decisions on the best available information. Extension professionals need to move from being the expert only, to also being a guide to better understanding. This will make Cooperative Extension information "the educational organization of choice" in the area of Agriculture and Natural Resources

Generic to Customized: Each learner or user of Extension must be able to see their own specific situation in educational programs. An example is "site specific agriculture" and the decisions associated with what this means relative to decisions that a farmer must make.

Recommendation number two says we must "Act as a learning organization." Peter Senge in his book *The Fifth Discipline* discusses what this means. Extension functions in all of these areas. In fact, the Kentucky Cooperative Extension has developed six essential elements of effective Extension programming.

To me, these elements that have been identified as "core values" for the Kentucky Cooperative Extension Service, are important from the standpoint that they can also be taken as principles of institutional commitment to sustainable agriculture.

The elements and my interpretation follows:

LEADERSHIP/CAPACITY BUILDING

(leadership is both doing things right but also doing the right things. As leaders develop they need to be well versed in the various views relative to farming and society so that programs and policies can have lasting effects)

USER/STAKEHOLDER COUNCILS

(Agriculture Advancement Councils described earlier must continuously be renewed with new people, new ideas, and an awareness of who should be involved. AAC's should be inclusive and not exclusive)

EDUCATIONAL CURRICULUM APPROACH

(Educational efforts should not be a series of unrelated activities, but a sequence of activities and learning opportunities that build understanding. Such an approach takes in the learning style of the "student" and may require separate classes for different audiences. The curriculum must be complete with profitability, environmental consequences and family and community implications included).

SERVICE ORIENTATION (This means that services provided must be user friendly. For example, soil test results and recommendations must be handled in a timely manner and in terms the user understands and can do. Recommendations need to be converted from elements required to units applied of an available fertilizer).

FACILITATION/COLLABORATION

FUNCTION (In the broad area of sustainability is it apparent that one of the most important requirements is that people and groups that are not accustomed to working with each other must begin by communicating. If Extension maintains an objective educational role it can be the effective bridgebuilder between the varying interest, not without some risk, of course).

EVALUATION/ACCOUNTABILITY

(We measure what we value. Since sustainable agriculture takes on a broader interest than just farm related activities and consequences, then there must be a broader level of accountability. Plans and results take on a new level of interest to a broader audience than previous agriculture programs.).

Through these six essentials Kentucky Extension can do it's part to keep the concept of learning communities alive in Kentucky. This should advance the concepts of "Sustainable Agriculture" and "Farming That Lasts".
