

# Profitwise

## News and Views

### Special Edition

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## The Future of Economic Development in Rural America



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# Save the Date

## Expanding the Rural Economy through Alternative Energy, Sustainable Agriculture and Entrepreneurship

Ames, IA

October 24 & 25, 2006

### **Profitwise** News and Views

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The Federal Reserve Bank of Chicago, Consumer and Community Affairs Division, in conjunction with the Iowa Department of Economic Development and the Iowa Bankers Association, will host a conference titled, "**Expanding the Rural Economy through Alternative Energy, Sustainable Agriculture and Entrepreneurship.**" The conference will be held at the Gateway Center in Ames, Iowa.

Participants will gain valuable insights from experts who will address the issues and opportunities involved with expanding the rural economy by capitalizing on Iowa's alternative energy potential, sustainable agricultural practices and entrepreneurial talent. The target audience is community development professionals, financial industry professionals, entrepreneurs, researchers, policymakers, and representatives of government agencies, foundations and academic institutions.

Events on Tuesday, October 24, 2006, include on-site tours of the Iowa Energy Center and the Lincolnway Energy ethanol plant, followed by a networking reception. A lunch and transportation between the Gateway Center and the two facilities, which are located in Nevada, Iowa, will be provided.

Topics on Wednesday, October 25, 2006, include: "Making Sense of Alternative Energy," by Dr. Robert Brown, Director of the Center for Sustainable Environmental Technologies at Iowa State University; "Natural Systems Agriculture," by Dr. Wes Jackson, president of The Land Institute; and panel discussions on alternative energy and community revitalization. Jack Schultz, CEO of Agracel and author of the book, "Boomtown USA - The 7½ Keys to Big Success in Small Towns," will give the keynote address, discussing important actions leaders in smaller towns can take to keep their communities growing. An ice cream social with Iowa Senators Charles Grassley (invited) and Tom Harkin (invited) will conclude the conference.

Conference attendance will be limited to allow for active participation by all attendees. As a result, conference reservations will be accepted on a first-received basis. We hope that you will be able to join us at the conference. For registration and other information visit: [www.chicagofed.org/ExpandingTheRuralEconomyConference/index.cfm](http://www.chicagofed.org/ExpandingTheRuralEconomyConference/index.cfm), or call (312) 322-8232.

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# The Future of Economic Development in Rural America



*Painted by Daniel Sweeney, copyright Iowa Energy Center 2003. All rights reserved.*

On November 17, 2005, the Federal Reserve Bank of Chicago, Consumer and Community Affairs Division, and the Iowa Department of Economic Development hosted a conference titled, “The Future of Economic Development in Rural America.” The conference followed a series of five smaller local conferences hosted by the Chicago Fed throughout Iowa over the past several years. These meetings served as the starting point for a broader effort to explore issues and opportunities in economic development in rural areas of the Midwest and specifically in the five states that comprise the Federal Reserve’s Seventh District.<sup>1</sup>

At the conference, held in Des Moines, Iowa, participants gained valuable insights from experts addressing difficult issues facing rural areas, some of whom have implemented innovative strategies to bring trade and jobs to communities previously in economic decline. Discussion topics at the conference included: Midwest agriculture and rural development issues; rural depopulation and its ramifications for the economic health of rural areas and their community banks; infrastructure in rural areas – including telecommunications, rural quality of life, and economic opportunities; twenty-first century agriculture and energy; and new state initiatives of the state of Iowa. Iowa Governor Thomas J. Vilsack provided the keynote address. The balance of this article summarizes the conference presentations and provides links to further references.

# Overview of Midwest Agriculture and Rural Development Issues

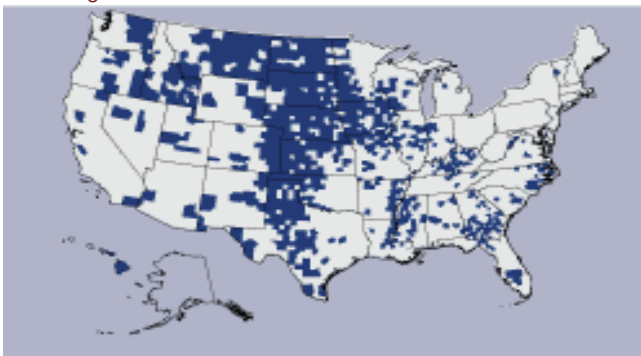
David Oppedahl - Business Economist, Federal Reserve Bank of Chicago

## The Future of Economic Development in Rural America

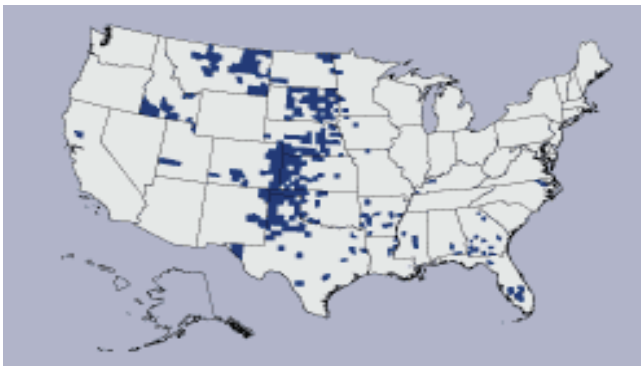
David Oppedahl highlighted several factors changing the face of rural America. First, he said farming has diminished as the primary occupation in many rural areas, especially outside the Corn Belt. However, agricultural production in the Midwest continues to provide about 85 percent of U.S. corn for grain and soybean output. In addition, almost 70 percent of U.S. production of hogs and pigs occurs in the Midwest.

### Figure O1: The Decline of Rural Agriculture

*In 1969, farming accounted for 20 percent or more of earnings in 935 nonmetro counties...*



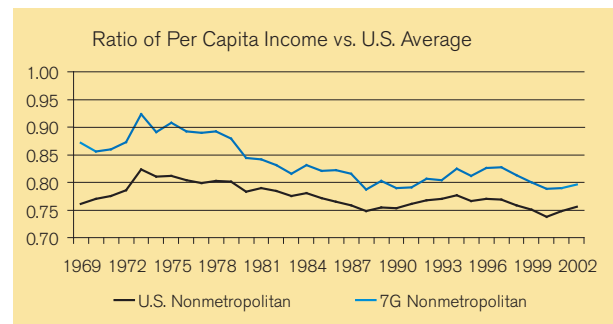
*...versus just 262 nonmetro counties in 1999*



Source: Federal Reserve Bank of Chicago

Even with tremendous productivity, Oppedahl noted, there has been a decline in the role of agriculture in rural America. As Figure O1 illustrates, farm earnings are becoming less important to rural economies. The map indicates that the number of counties that depend on agriculture for at least 20 percent of earnings decreased significantly over the past three decades. As a percentage of gross state product, production agriculture in the Seventh District fell under one percent by 2000 from over four percent in the 1970s. Though net farm income has been high the last few years, a substantial portion comes from direct government payments. "These facts lead one to wonder if farming is the 'last welfare culture' and how agricultural interests will approach the discussion about future farm policy," Oppedahl noted.

### Figure O2: Nonmetro Incomes in Decline in Seventh Federal Reserve District and Nationally



Source: Federal Reserve Bank of Chicago

These agricultural trends have a large impact on rural development, particularly as rural areas experience population decline. Oppedahl pointed out that counties without recreational or retirement appeal, or links to metropolitan areas by proximity and interstate highways, are losing population. Further, as the graph in Figure O2 shows, nonmetropolitan per capita income continues to fall further behind the U.S. average. Manufacturing

has partially compensated for agricultural decline, and industries (such as food processing) that draw on agricultural feedstocks continue to be a cornerstone of rural manufacturing. However, many rural places are looking to advances in biotechnology to ignite new industries that draw on production agriculture and whose economics dictate a rural location and create local jobs.

At one time, all agriculture was organic. A resurgence of organic production has brought farmers higher prices for their output. Direct sales of production have boosted returns even further, drawing comparisons to an earlier era of local markets. Biofuel production, especially ethanol, has expanded rapidly in the Midwest, and there is great potential for the growth of bioproducts and pharmaceuticals in rural areas. These new products may foster higher household incomes as well, given that hourly wages in the ethanol industry compare favorably with the U.S. manufacturing average. Moreover, the concept of biorefineries dotting the rural landscape brings visions of a revitalized rural Midwest. "Entrepreneurs remain vital to rural revival, since they are agents of change and expand the boundaries of economic activity," explained Oppedahl. "Building on the agricultural tradition of entrepreneurship by forming regional partnerships and promoting business formation remains the key to the future of the rural Midwest."

# Rural Depopulation: What Does it Mean for the Future Economic Health of Rural Areas and the Community Banks that Support Them?

John M. Anderlik – Regional Manager, Divisions of Insurance and Research for FDIC, Kansas City, Missouri

The Future of Economic Development in Rural America

John M. Anderlik discussed the trends and causes of rural depopulation and the effects of depopulation on rural financial institutions. Because the conference was held in Des Moines, Anderlik provided some specific information about depopulation in Iowa. However, he stressed that depopulation was less of a concern for Iowa than for other states, such as North Dakota and Nebraska. This summary focuses on Anderlik's remarks regarding regional trends, rather than those specific to Iowa.

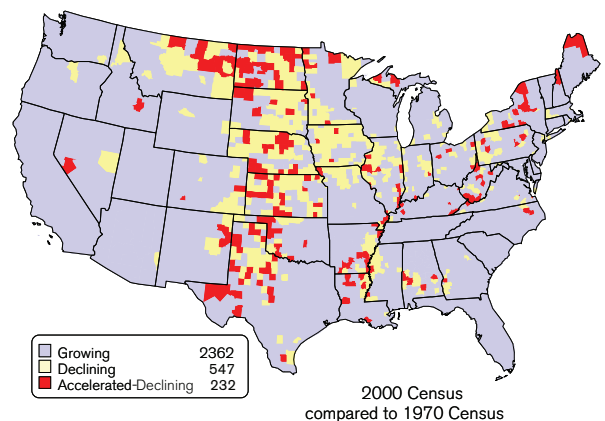
## Trends and Causes of Rural Depopulation

The United States is in the midst of a major demographic shift: the depopulation of a significant portion of the nation's rural counties. Rural depopulation has ramifications for the future economic viability of the counties experiencing decline, and for the banks that serve them.

According to Census figures, between 1970 and 2000 the nation's population rose from 203 million people to 282 million, an average annual increase of 1.1 percent. However, this increase was not evenly distributed across the country. Analysis of Census data at the county level shows that during the 30-year period, 1970-2000, 779 of the nation's 3,141 counties (both rural and metropolitan) lost population. In 232 of the depopulating counties the rate at which the population declined accelerated during the 1990s.

For purposes of analysis, Anderlik divided the nation's counties into categories depending on each county's "rurality"<sup>2</sup> and then on its population trend between 1970 and 2000 (see Figure A1). After pulling out metropolitan counties,<sup>3</sup> he classified the remaining rural into three groups according to the nature and extent of population growth: growing rural counties, declining rural counties, and accelerated-declining rural counties ("depopulating" refers to the second and third groups combined):

Figure A1: Depopulation is Most Prevalent in the Center of the Country



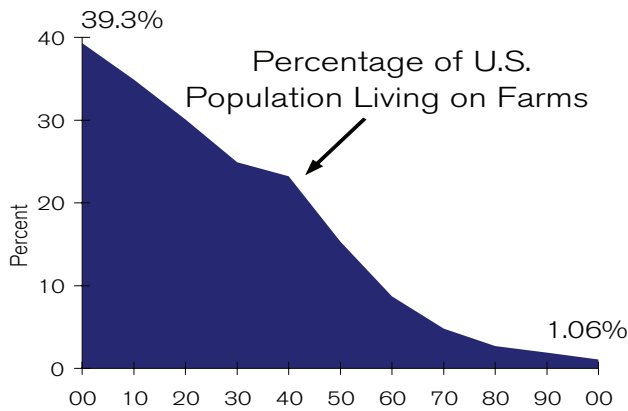
Source: FDIC

- Growing rural counties added population between 1970 and 2000.
- Declining rural counties lost population between 1970 and 2000, but not at a faster rate during the 1990s.
- Accelerated-declining rural counties not only experienced a population decline between 1970 and 2000, but also lost population more rapidly in the 1990s than in the prior two decades.

Declining counties are highly dependent on agriculture. Due to dramatic technological change, farms are managed and operated with much less human labor than in the past. As a consequence, displaced farmers and their children have migrated to more vibrant urban centers, leaving steadily fewer people in agriculture-dependent communities. The small towns that traditionally supported farmers have declined due to decreased demand and competition from larger urban centers.

The consolidation of agriculture is dramatically illustrated in Figure A2, which shows the percentage of people living

**Figure A2: The Farming Community Reduced Significantly in the 1900s**

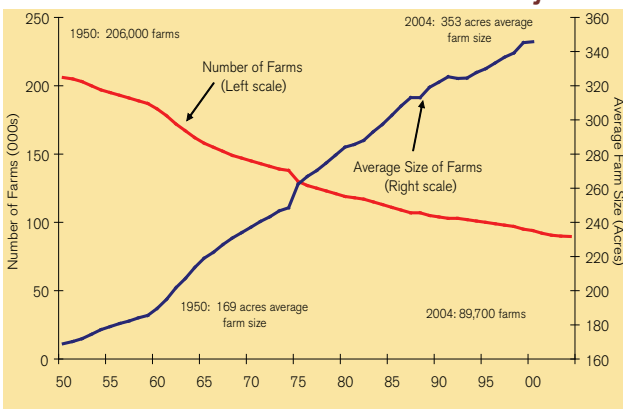


Source: FDIC, Figures for 1900 through 1980: *Population and Community in Rural America*, Lorraine Garkovich; figures for 1990 and 2000: Calvin Beale, USDA, Personal Communication.

on farms over the past century and the extent to which the number of farmers is declining. In 1900, 39.3 percent of all Americans lived on farms; only 1.06 percent of all Americans lived on farms in the year 2000. Presently, larger and fewer farms are operated by a smaller number of people.

Figure A3 shows the extent of the consolidation of agriculture. In 1950 Iowa, there were 206,000 farms averaging 169 acres per farm. By 2000, there were about 90,000 farms averaging 353 acres per farm. “You can run this map for any state and it pretty much looks the same,” stated Anderlik; “farms are getting bigger and fewer in number.”

**Figure A3: Iowa Farms Consolidated Substantially in the Last Half of the 20th Century**

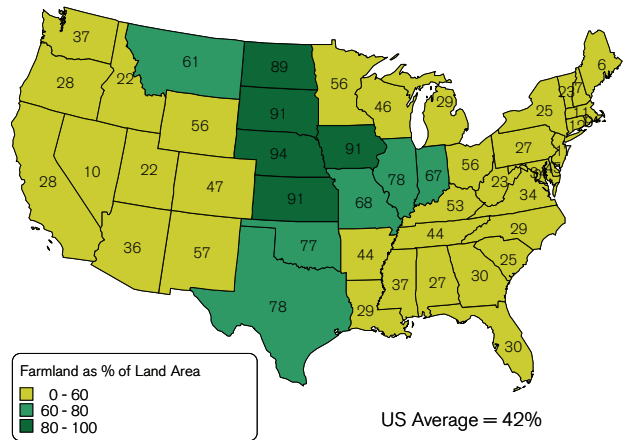


Source: FDIC, USDA

States experiencing the most significant depopulation have the highest proportion of farmland. Figure A4 illustrates the percentage of each state’s land that is dedicated to farming. The reasons for depopulation are rooted in the transforming agricultural industry, as the chart illustrates. Both the Great Plains and the Corn

Belt have very high percentages of farmland, and the depopulation among those states is high. Anderlik noted that Iowa, at 91 percent, ties for second with Kansas and South Dakota with respect to farmland area; Nebraska’s ratio is 94 percent.

**Figure A4: States Experiencing the Most Significant Depopulation Have the Highest Proportion of Farmland**



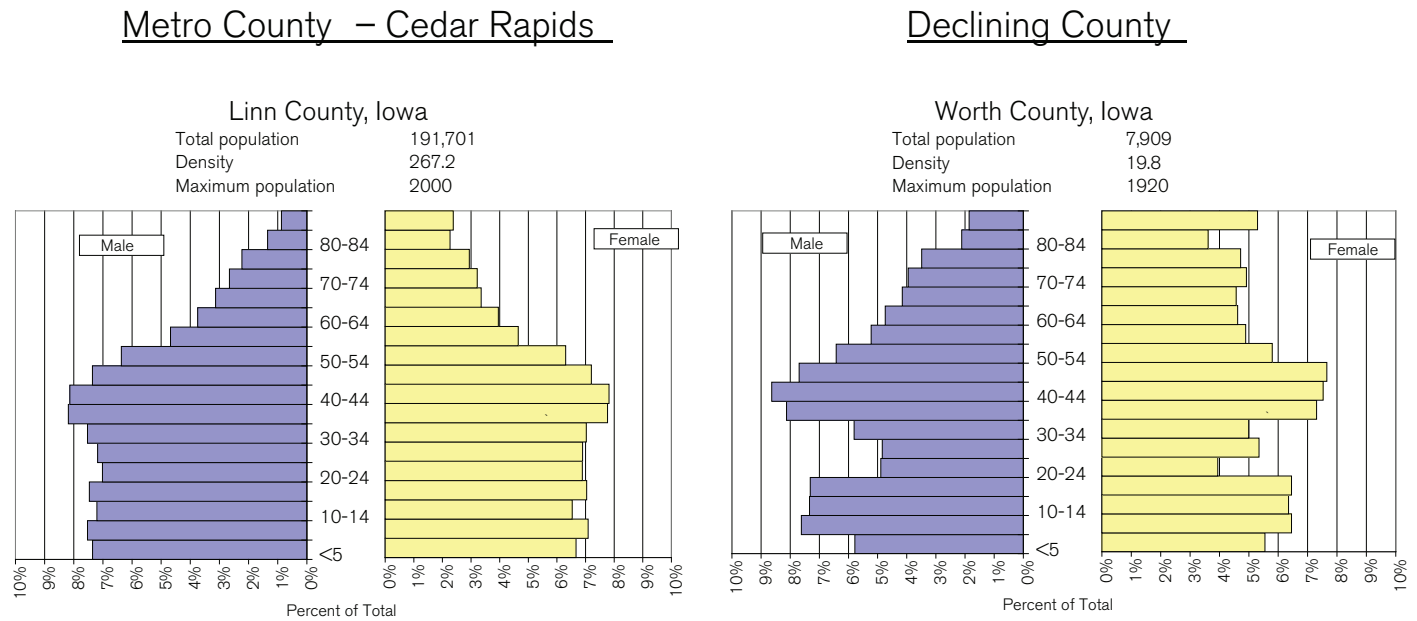
Source: FDIC, USDA

The implications of low population densities are striking. Sparsely populated counties lack the population density necessary to maintain their vital infrastructure, such as government agencies (including police and fire departments), roads, schools, and hospitals. As existing infrastructure is allowed to decline, counties become less attractive places to live and conduct business and the costs per capita to provide needed services increase. These outcomes induce current residents to leave and create a poor environment for creating and attracting new businesses, furthering economic decline. Anderlik stated that many demographers have estimated that a minimum population of 10,000 in a county is the level required to support services and infrastructure. Eighteen counties in Iowa currently fall below this threshold. Anderlik identified three critical problems for depopulating areas: unhealthy demographic age structures, a “brain drain” phenomenon, and declining commercial activity.

Anderlik’s study found that the age structures of metropolitan and rural depopulating counties vary significantly. Figure A5 shows two age pyramids—one for metropolitan Linn County (a Cedar Rapids metropolitan county) and the other for depopulating Worth County. (Anderlik noted that Worth County was chosen because it is the median declining county in Iowa, so it is not an extreme example, but merely illustrative of Iowa’s average declining county.)

From an age structure perspective, Linn typifies a healthy metropolitan county. It has a balanced age distribution, a healthy population of children, and a slight “bubble” for the

**Figure A5: Age Structures of Metropolitan and Rural Depopulation Counties Vary Significantly**



Source: FDIC, 2000 Census

30- to 50-year-olds. The slightly disproportionate 30- to 50-year old category is good because this age bracket has a high proportion of employed and of child bearing age.

Worth County, however, has a less healthy age distribution. The “pinched waist” appearance of the graph indicates a large number of young people, but few young adults – those in their early 20s. As they find economic conditions declining and employment opportunities in the county lacking, the young people move to areas with healthier economies. Also noteworthy is the very high proportion of elderly in Worth County as compared with growing Linn County. About 6 percent of Worth County’s population comprises women over age 85. A high proportion of elderly and few young adults give rise to a “negative natural increase” – a condition where the older population dies off faster than children are born due to the relative scarcity of young adults.

The term “brain drain” refers to the condition where shortly after completing their formal education, young adults tend to leave rural areas in search of better economic opportunities elsewhere. For example, North Dakota (Figure A6), had a level number of people with bachelor’s degrees from 1989 to 1999, but produced over 45,000 bachelor’s-level graduates in the period. On a net basis, the state saw no gain in degreed individuals in the period, despite this output.

The third issue Anderlik identified for depopulating areas is the downward trend of commercial activity. Lower populations support fewer retail establishments. As farms grow fewer but larger, they outgrow the ability of small town businesses, including bankers, to meet their

needs. Further, businesses in smaller towns succumb to competition from larger towns as agricultural supply companies including farm machinery dealers and chemical and feed distributors consolidate into fewer and larger operations.

**Figure A6: The “Brain Drain” is Reaching Critical Proportions in the Great Plains**

State	Estimated Number of Persons Over 25 Years Old with a Bachelor’s Degree	Estimated Change in Bachelor’s Degree	Number of Bachelor’s Degrees Produced	Estimated Net Brain Drain or Net Gain
	1989	1999	1989-1999	1989-1999
Minnesota	577,920	953,920	376,000	234,945
Montana	106,977	134,160	27,183	42,976
North Dakota	89,244	89,200	-44	45,022
South Dakota	79,672	110,848	31,176	40,669
Wisconsin	571,725	790,600	218,875	269,647

Note: Population data were revised by the Federal Reserve Bank of Minneapolis

Source: FDIC, Postsecondary Education Opportunity

**Effects of Depopulation on Rural Financial Institutions**

At year-end 2003, there were 1,451 banks and thrifts – 16 percent of all insured financial institutions in the nation – headquartered in rural counties with declining populations.<sup>4</sup> For financial institutions, declining populations generally mean declining customer and deposit bases.

Anderlik’s analysis focused on rural financial institutions located in the Great Plains (North Dakota, and portions of Montana, Minnesota, South Dakota, Wyoming, Nebraska, Colorado, Kansas, Oklahoma, New Mexico, and Texas) as the effect was most significant in this region (see



## Figure A7: There are Over 500 Banks and Thrifts in Great Plains Depopulating Counties

Number and Assets of Banks and Thrifts by Type of County, by Region

	Rural Counties			Metro Counties	Total
	Growing Counties	Declining Counties	AD Counties		
<b>Great Plains</b>					
Number of Institutions	306	323	184	286	1,099
Total Assets (in billions)	37.9	20.1	12.1	91.1	161.2
Median Assets (in millions)	70.8	39.3	39.0	106.9	55.6
<b>Corn Belt</b>					
Number of Institutions	862	610	85	1,649	3,206
Total Assets (in billions)	108.0	52.6	7.9	1,843.1	2,011.5
Median Assets (in millions)	84.0	57.3	53.1	118.0	88.5
<b>Delta-South</b>					
Number of Institutions	386	81	58	438	963
Total Assets (in billions)	74.5	10.8	5.9	470.7	561.9
Median Assets (in millions)	106.3	78.4	79.4	128.2	111.1
<b>Appalachia-East</b>					
Number of Institutions	147	18	34	429	628
Total Assets (in billions)	58.4	8.7	8.0	1,998.7	2,073.8
Median Assets (in millions)	150.6	96.1	84.2	246.5	193.4
<b>Nation - Total</b>					
Number of Institutions	2,692	1,061	390	5,021	9,164
Total Assets (in billions)	490.8	93.9	37.9	8,374.8	8,997.4
Median Assets (in millions)	94.9	52.7	50.6	147.9	105.8

Source: FDIC. Bank and Thrift Call Reports, December 31, 2003

Figure A7). The region has over 500 banks and thrifts in depopulating counties with over \$32 billion in total assets. In the Corn Belt (Iowa, Wisconsin, Illinois, Indiana, Michigan, and parts of Ohio, Missouri, Minnesota, South Dakota, Nebraska, and Kansas) there are approximately 700 institutions with \$60 billion in total assets.

Anderlik noted that the median asset size of institutions in the Great Plains is notably less—about \$39 million in a yellow county in the Great Plains—compared with about \$53 million in a Corn Belt yellow county. Median (county-wide) asset size is much higher in all other areas of the country. Anderlik stated that fewer people in the Great Plains simply leads to smaller banking institutions.

Anderlik's analysis sought to address three questions. First, are Great Plains financial institutions disappearing at a faster rate than in other regions? Second, have Great Plains institutions been adversely affected by the region's demographic trends, and what has been the effect on the bank performance? Third, have bankers developed or discovered ways to flourish in areas with shrinking populations?

In terms of bank consolidation trends, he found very little difference between Great Plains depopulating rural counties and rural counties elsewhere in the nation. Since 1984, about half of Great Plains rural banks have disappeared, tracking the rate (in rural areas) outside of the Great Plains. Also, within the Great Plains, consolidation rates have been similar in rural counties with growing, declining, and more rapidly declining populations.

There are differences between regions in the number of counties that are not home to the headquarters of a bank. Of the 424 rural counties in the Great Plains, 76 (18 percent) do not have a headquarterd bank or thrift. By contrast, of the 890 rural counties in the

other depopulating regions, 13 percent do not have a headquarterd institution. Of the 76 rural Great Plains counties that do not have headquarterd banks, 18 did not have an institution headquarterd there over the entire 19-year period Anderlik studied. The other 58 had at least one institution at the beginning of the period, but those institutions either failed or were purchased by other institutions in the succeeding years.

As one might expect, the vast majority of the counties without headquarterd banks are sustaining population declines. Only 11 percent of Great Plains rural growing counties have no headquarterd institution, but among declining and accelerated-declining counties, more than 20 percent have no bank headquarters. Of the states in the region, South Dakota has the largest proportion (and greatest number) of counties with no headquarterd institution, at 32 percent (21) of its 66 counties. Montana, at 20 percent (11 counties), has the second highest proportion and number.

Although consolidation trends in rural community banks in the Great Plains have been stable and representative of national figures, two pieces of evidence suggest that consolidation in the Great Plains may increase more rapidly in the future. One is the significant number of elderly people living in depopulating counties. Figure A5 depicts the age pyramid of depopulating Worth County (which Anderlik technically considers to be in the Corn Belt). That age pyramid – representative of many Great Plains counties – shows a large pocket of elderly people. In the relatively near future, these people are going to pass away, and their banking business may move outside the area with the heirs. As many elderly customers also carry large deposit balances, their passing may result in a major loss of funding that may be difficult for many small banks to withstand.

The second factor that could increase consolidation is the lack of a succession plan in many community banks. The typical community bank in the Great Plains is small and owned and operated by the same person. In many cases, the owner/operators do not have family members groomed to take their place when they retire because, like other young people, the family members have migrated to counties where economic opportunities are greater. And because of the brain drain in rural areas, there may not even be suitable nonfamily members to assume operations.

Anderlik reported the typical short-term way to deal with the succession problem is for owner/operators to delay retirement. When these bankers do retire, their institutions will most likely be sold, which could dramatically increase the pace of rural bank consolidation.

## Performance of Great Plains Community Banks

Next, Anderlik investigated whether bank performance in depopulating rural areas was any worse than performance of banks in vibrant rural counties. Anderlik looked at “community banks” – banks and thrifts with less than \$250 million in assets, headquartered in rural counties.<sup>5</sup> Surprisingly, when the financial ratios of community banks headquartered in and outside the Great Plains are compared, evidence of depopulation-induced deterioration does not emerge. From 1999 to 2003, the overall earnings, net interest margins, and asset-quality ratios reported by rural community banks in the Great Plains were similar to those reported by rural community banks headquartered outside the Great Plains. A notable difference is the loan-to-asset ratio: Community banks based in the Great Plains report lower loan-to-asset ratios than their counterparts across the country. These lower ratios are probably explained by a comparative lack of lending opportunities in those market areas. Anderlik added that the performance of Iowa banks was very similar to those in the Great Plains – Iowa banks are generally highly profitable, well capitalized, and possessing strong asset quality.

Thus, despite the lack of strong loan demand and a shrinking customer base, community banking performance in the Great Plains is similar to what it is across the entire nation. How have community banks in the Great Plains been able to report similar operating results when such a large number of them are located in dwindling markets? One possible answer, Anderlik noted, is that, to date, depopulation has been occurring very slowly, and bankers have been able to adjust capably to their economic environments.

Another possibility is that community banks in the Great Plains have nearly three times the exposure to agricultural lending that community banks in the rest of the nation have. In fact, 80 percent of community banks in the Great Plains are considered farm banks, compared with just 28 percent elsewhere.<sup>6</sup> Farming has been, and continues to be, one of the most heavily subsidized industries in the United States. In fact, government payments nationally averaged \$19 billion per year from 1999 through 2003, representing about 40 percent of net farm income over that period. Although not all farm products nationwide are subsidized, the primary crops of the Great Plains – wheat, corn, and soybeans – tend to be supported more generously than products grown outside the region.<sup>7</sup> As a result, farms in the Great Plains have received higher subsidies as a proportion of net farm income than farms elsewhere in the nation. Such support has helped farmers repay their farm loans and offset whatever negative consequences farm banks might have otherwise experienced from adverse demographic trends.

**Figure A8: Balance Sheet Growth Rates by Type of County, Rural Great Plains, Year-end 1993 to Year-end 2003**

Great Plains County Type	Annualized Growth Rate (%) between Year-end 1993 and Year-end 2003			
	Total Assets	Total Loans	Total Deposits	Core Deposits
Metropolitan	8.87	11.16	8.61	7.87
Rural	4.37	6.77	3.84	3.04
Growing	4.78	6.96	4.28	3.47
Declining	4.04	6.32	3.45	2.64
Accelerated-Declining	4.10	7.16	3.61	2.84

*Note: All growth rates are merger adjusted. Community banks are defined as banks and thrifts with less than \$250 million in total assets.*

Source: FDIC, Bank and Thrift Call Reports

Major differences in bank performance can also be found in balance-sheet growth rates. “This makes a lot of sense,” stated Anderlik. “If your customer base is declining, it seems you’re going to have problems growing your balance-sheet categories.” Figure A8 shows the annualized growth rates of assets, loans, deposits, and core deposits from 1993 to 2003.

Anderlik attempted to identify “best practices” among banks and thrifts headquartered in Great Plains depopulating counties. He looked only at community banks that have been in operation at least 10 years. He analyzed two metrics as proxies of success – earnings and asset growth (five-year pretax ROA and five-year annualized asset growth) – and discovered three major findings:

- “First, size matters,” Anderlik said. Larger asset sizes can result in certain economies of scale, helping institutions keep operating costs relatively low.
- Second, net interest margins (NIMs) are key,” stated Anderlik, “as they always have been.” The range of NIMs reported for 1999-2003 went from 3.87 percent for low-growth/low-earning institutions to 4.49 percent for high-growth/high-earning institutions. Because a considerable majority of community bank revenue is generated through the NIM, this difference is significant.
- Third, branching strategies – and their success – vary widely,” cautioned Anderlik. While branching into areas that are more economically vibrant than the county of the bank’s headquarters is a relatively popular strategy, it may not always prove profitable. Branching can also be a risky proposition because management’s knowledge of new markets, its expertise in new types of lending activities, and its ability to control expenses become more important.

## The Effect of the Internet on Customer Base

Anderlik questioned whether, beyond differences in bank performance, a cure exists for community banks in depopulating rural areas. One common response from

rural bankers is that the Internet could be the solution, but not everyone agrees.

Proponents of the Internet see it as a bridge for rural communities. Residents are increasingly able to use the tool to shop for goods and services anywhere in the country. Skeptics, however, view the Internet as competition for long-time local businesses. For community banks, the Internet would allow them to expand their customer bases electronically even while their local populations are declining. However, the banks also would effectively be undoing the geographic ties that bind them to their customers.

Furthermore, the Internet also allows larger banks to market their products in rural areas where locating a physical branch might not be feasible. Large banks typically have a wider array of products and lower cost of providing services than rural banks. Widespread use of the Internet in rural areas, therefore, may allow larger banks to become formidable competitors of rural institutions. (This topic is explored further in the section below “Infrastructure in Rural Areas: Telecommunications.”)

### **Looking Ahead – What Does the Future Hold?**

Policymakers at every level continue to search for solutions to the problem of rural depopulation in the most severely affected counties, especially the Great Plains. One viewpoint holds that rural depopulation is the result of fundamental economic forces, or the cumulative effect of millions of individuals responding to market forces. The proponents of this view maintain that the role of public policy should be limited to programs that facilitate migration from the rural areas. These programs may include educating and training rural residents to improve their skills, thereby becoming more attractive as employers. These policies, however, would most likely adversely affect community banks in depopulating areas because the banks' customer bases would continue to erode. The programs favored by the advocates of this viewpoint are sometimes labeled “rural transition programs.”

Others favor an “economic development strategy” that would use government funds to reverse market forces and restore viability to declining rural areas. This long-run strategy would address the needs of those left behind – those unwilling or unable to migrate. Economic development policies, Anderlik explained, are usually justified by arguments that lie beyond economics, such as the social value of the rural lifestyle. Such policies typically include expenditures for the development of infrastructure and the enhancement of business opportunities.<sup>8</sup> These policies could ultimately benefit community banks in counties where such policies were implemented, but the ultimate cost of such programs could be substantial.

On a smaller scale, some communities have implemented economic development policies that have shown promise. For example, several communities in Kansas – most recently the city of Marquette – have given away land for new residences and businesses. While such efforts have worked, Anderlik points out that their scale is much too small to be considered as a comprehensive policy to reverse depopulation trends throughout the Great Plains.

Communications technology (e.g., the Internet and the continued spread of broadband access into rural areas) potentially holds some promise for depopulating counties. Rural businesses hope that such technology will allow them to market to customers well beyond the businesses' own county lines. However, this technology also allows urban businesses, including large banks, to reach into isolated rural communities, thus becoming a powerful new source of competition.

On the bank regulatory side, one effort that may assist rural community banks is a reduction of federal banking regulations. The Economic Growth and Regulatory Paperwork Reduction Act of 1996 (EGRPRA) requires federal financial regulatory agencies to identify outdated, unnecessary, or unduly burdensome statutory or regulatory requirements for possible elimination. These efforts could reduce the operating costs of financial institutions, and be of particular importance to small banks, which have disproportionately high legal compliance costs.

Looking ahead, Anderlik said increasing bank consolidation in depopulating rural areas will alter the number of institutions dramatically over the next 20 years. In the meantime, the strategic options available to community banks in depopulating counties are limited. Over the short term, community bank success in rural areas could depend on management's willingness to take well-conceived risks, such as branching into more economically vibrant areas. However, many management teams may not have the expertise to do this without increasing their institutions' risk profiles. Another viable strategy may be for management to streamline their institutions, cutting costs wherever possible, to remain profitable despite the absence of local opportunities for growth.

While the current economic prospects of the Great Plains rural counties remain foreboding and bank consolidation may increase considerably over the next 20 years, rural banking is by no means entirely in danger, Anderlik pointed out. Many insightful bank managers have already crafted strategies to combat the demographic challenges and have been rewarded with strong profitability and/or asset growth. Such managers will continue to do so, even if the numbers of rural banks continue to dwindle. The result could be a smaller, but stronger rural banking system.

# Infrastructure in Rural Areas: Rural Quality of Life and More

**Moderator – Kelly Haverkamp, Executive Director of Wisconsin Rural Partners, Inc. (WRPI)**

## The Future of Economic Development in Rural America

WRPI is a nonprofit organization that builds, trains, and supports public-private collaborative partnerships to create and implement strategies that improve rural community life across Wisconsin.

### **Wisconsin's Top Rural Development Initiatives and Quality of Life**

The WRPI's "Wisconsin's Top Rural Development Initiatives" is an annual recognition program to identify and profile some of the state's best community-based and led activities.<sup>9</sup> Haverkamp explained that while the WRPI has discovered that "quality of life" ("QoL") is defined differently from place to place and person to person, it has certain common indicators called lifestyle benchmarks, which include: natural amenities, arts, history, culture, third spaces, and outdoor recreation.

### **Four Opportunities in the "New Rural Economy"**

Haverkamp explained that the context of her comments were based in part on research conducted by the Federal Reserve Bank of Kansas City's Center for the Study of Rural America. Using the findings of the center, Haverkamp identified four QoL opportunities in the new rural economy.<sup>10</sup> These opportunities are: wildlife recreation, historic tourism, creative economy, and agricultural tourism.

### **Wildlife Recreation**

According to the Kansas City Fed, wildlife recreation is rural America's newest billion-dollar industry.<sup>11</sup> Wildlife recreation refers to hunting, fishing, and wildlife watching (such as bird watching). According to Haverkamp, Wisconsin ranks seventh in dollars spent on wildlife recreation (with more than \$500 spent per capita). The leading spenders are mostly western states with large hunting facilities such as Montana, Idaho, and Wyoming. The key to developing wildlife recreation, Haverkamp

noted, is investing in infrastructure that supports tourism, such as hotels, restaurants, and transportation.<sup>12</sup>

The most intriguing piece, Haverkamp said, is "whole experience" development, which refers to the concept of enabling visitors who initially take part in just one activity to experience all the different businesses in a community.

In recent years, wildlife biologists in Wisconsin noted a marked increase in the number of inquiries from people seeking bird watching opportunities. In 2003, the Wisconsin Department of Natural Resources, in partnership with the Wisconsin Department of Tourism, and a variety of local nature and hospitality organizations, created a statewide program called the Great Wisconsin Birding & Nature Trail. The program divides the state into five bird watching regions based on species and habitats. Each region will produce a guide to bird watching, which will also include information on other attractions, accommodations, restaurants, and complementary activities. This will provide visitors with a package of options to choose from so they can spend more time bird watching and less time seeking out food, lodging, and other necessities. Businesses located at trail stops carry retail, promotional, and educational products marketed specifically to the bird watchers. Participating trail stops are featured in each guidebook so visitors can plan ahead for meals, lodging, and gas stops.

As of November 2005, two trails were fully functional and have produced guides. Although it is too early for sufficient collection of data on the program's economic impact, several participating businesses in the Lake Superior Northwoods Trail have reported up to a 25 percent increase in revenue because of the trail.

Cluster business development, in which similar types of businesses locate in close proximity in order to become a tourist destination, is important to create sufficient infrastructure to support tourism, Haverkamp explained. As an example, she referred to a slide from

David Oppedahl's presentation showing rural counties that are increasing in population (see page 2). She noted counties in northern Wisconsin, bordering Lake Superior, where there has been a movement to cluster business opportunities around kayaking, skiing, and other recreation-based businesses in order to become an outdoor recreation destination. This cluster development has made the Bayfield area a mecca for water sports enthusiasts, and has resulted in a tourism clientele that is harmonious with the natural amenities of the region.

Education is the final component to wildlife recreation. Haverkamp offered the tourism businesses that focus on eagle watching in Wisconsin as an example. Those who travel to Prairie du Sac to observe the annual Bald Eagle Watch each January are greeted with opportunities for bus tours, educational programs, and special features at a local photography studio and winery. Visitors learn about bald eagle habitat, migration, behavior, breeding, etc. The expanded opportunities encourage visitors to stay longer and spend more money in the community. The visit also promotes "word of mouth" marketing for the community.<sup>13</sup> This educational component, along with the "whole experience" development, has increased the overall tourism draw to the area.

### **Historic Tourism**

The second QoL opportunity in the new rural economy is historic tourism. The strategy holds that because every place and every person has a history, Haverkamp explained, communities that wish to pursue historic tourism need to look to their community's past to determine its uniqueness and how to take advantage of it. As an example, she cited one of Wisconsin's Top Rural Development Initiatives related to historic tourism—the Potosi Brewery Restoration.<sup>14</sup>

Located in southwest Wisconsin, Potosi has approximately 600 people. The brewery, which operated from 1852 to 1972, was listed on the National Register of Historic Places and later identified as one of the 10 most endangered properties in Wisconsin. In 2000, through a regional partnership and a cooperative, restoration on the brewery began, and by 2004 \$2.4 million had been raised for the effort. As a result, the community won out over Milwaukee and St. Louis to house a national brewery museum. The building will also house the Great River Road Interpretive Center and is scheduled to open within the next year.

### **Creative Economy**

"The arts and art-related activities are becoming good economic drivers for rural communities," Haverkamp said.<sup>15</sup> The creative economy requires a people-based development approach, she explained, that involves asset mapping and support of entrepreneurial activities.

One example of Top Rural Development Initiatives that reflects the creative economy and have had significant impact on a community is the Suring Bridge to Tomorrow project. The Suring Bridge to Tomorrow is now the central symbol in the tiny community of Suring in northeast Wisconsin. The bridge, built in the 1930s, was the primary entrance to the community for vehicle traffic. It was scheduled for demolition and replacement as part of a highway upgrade, but members of the community wanted to preserve it. The village government and children from local schools enlisted the help of two local artists who developed a community-wide project that involved painting the bridge with murals depicting their community. The bridge was moved to an undeveloped public space and dozens of local residents contributed their artistic talents. The project drew so much attention that it prompted development of the space into a park that serves as a community center, which has become the venue for festivals and events and has prompted several other arts-based projects around the small village.

### **Agricultural Tourism**

The fourth new rural economy opportunity Haverkamp discussed is agricultural tourism. For decades, family-farm based agriculture has been experiencing decline, both in the overall economic contribution to the economy and in the ability of small farms to produce sufficient sole-source incomes, she explained. The development of a global economy has caused small agricultural producers to look closer to home to develop new markets. One of the ways they have been successful in creating new markets is through agricultural tourism, which combines the many benefits of tourism development with agricultural products and pursuits.

Agricultural tourism allows farmers to provide on-farm products and experiences and sell directly to the consumer. This helps eliminate "middle-man" costs of getting wholesale products to market, and allows the farmer to keep a greater share of the profits, boosting on-farm income. Retaining this revenue locally adds to the economic wealth of the community. Agricultural tourism also educates the general public on how farms are businesses, and how valuable farm production contributes to a healthy local economy, Haverkamp explained. When agriculture becomes part of the economic development of a community, new markets open up, helping to create a valuable tourism identity for a region.

Haverkamp offered one example of successful agricultural tourism that has been recognized as Wisconsin's Top Rural Development Initiatives. The CranberryLink® Visitor Center in Wisconsin Rapids offers the history of the native American fruit, tours of cranberry bogs and processing operations, scenic drives during harvest, arts and crafts, recipes, and various cranberry

products for sampling and gifts. The development of the center as a tourist attraction has helped educate the public about the cranberry, of which Wisconsin is the second largest producer in the United States.

## Vision Iowa

**ANDREW R. ANDERSON - Attorney with  
Faegre & Benson, LLP, Des Moines, Iowa**

Andrew R. Anderson is also chairman of the Vision Iowa Board (VIB), Iowa's preeminent public infrastructure financing program. For over six years, Anderson was legal counsel to the Iowa Department of Economic Development (IDED). The VIB and IDED are responsible for the development of nine major public facilities and 40 smaller public attractions, including an aquarium, a science center, sporting arenas, riverfront redevelopment, and conference centers.

"I'm the [one] that has to pay for what Kelly Haverkamp wants to do," Anderson quipped. "Five years ago, the most common complaint heard in Iowa was that there was nothing to do. Economic development was primarily focused on job retention, and not on cultural vitality or cultural activities." He explained that in order to confront that "nothing to do" problem, Governor Vilsack introduced a bill in 2000 that proposed the creation of a fund to financially assist the creation of recreational, cultural, educational, and entertainment attractions. At the time, spending a large amount of state money to develop these sorts of attractions was a novel concept. As a result, Vilsack and the Iowa Legislature created the VIB, which, in turn, established the Vision Iowa Fund (VIF) and continued the existing Community Attraction and Tourism Fund (CAT). The funds provide financial assistance for recreational, cultural, educational, or entertainment attractions that are available to the general public.

Anderson explained that the VIF was created to fund larger attractions, where the total cost of the project must be at least \$20 million, but applicants can't receive more than \$75 million in financial assistance. The applicant must also provide financial and nonfinancial support of the project equal to at least 50 percent of the total project cost. The CAT fund is designed to focus more on smaller projects in smaller communities.

The novel approach earmarked state revenues from infrastructure for cultural activities. After overcoming initial skepticism, strong leadership by the VIB, coupled with solid support by the state treasurer and auditor, led to use of a "developer's approach" by aiming to leverage state money to attract funds from other sources. "In other words," Anderson said, "the VIB's plan was to be the honey that would attract the bees in order to entice as

many resources as possible to fund as many projects as possible."

Proposed by cities, counties, or nonprofit organizations, eligible projects for the VIF include primarily "vertical infrastructure" – land acquisition and construction, major building renovation and repair, all appurtenant structures, utilities, site development, and recreational trails. The projects must also be open to the general public. "These types of projects add a lot of construction and trade-type jobs in the communities," added Anderson.

The state treasurer, at the request of the VIB, is authorized to issue bonds against state gaming revenue to fund projects approved by the VIB. The maximum value of the bonds issued for the Vision Iowa program cannot exceed \$300 million in principal. This has yielded approximately \$260 million for the VIF. The CAT Fund is financed out of annual appropriations, generated partially through the bank franchise tax, and will receive \$12 million annually through 2010.

The Vision Iowa process fosters local leadership through high expectations and local vision for the community. "The Vision Iowa Fund demands that there be local leadership," stressed Anderson. "Throughout the state we've done 13 large projects and over 200 small projects, and each one of these communities has had to have local leaders that can come in, help develop the idea and the financing, and then execute the plan." The program has not just involved the development of buildings, but also the development of local people and leaders. Anderson stated that this aspect has directly addressed Iowa's "brain drain" through development of its local human capital.

Anderson also noted that partnerships between public and private sectors are integral to making the Vision Iowa process work. "We expect city, county, and private money to be in every deal that we participate/invest in," stated Anderson. This approach stretches VIF funding dollars. More importantly, it unleashes capital that may not have otherwise gone into the market. For example, Anderson explained, there are many counties that don't use even a fraction of their bonding capacity and cities that don't use their reserves of cash. In addition to the federal government, some private sources (the gaming sector, utilities, and banks) are also willing to partner.

Through the VIF, funding totaling \$226.5 million for 13 projects has been awarded. The awards have leveraged almost \$2 billion in investment in Iowa, created 766 jobs and generated approximately \$7.094 million in tax revenue.<sup>16</sup> In addition, 205 CAT awards totaling \$69.5 million have been made, leveraging over \$505 million in investment in Iowa.

## Importance of Rural Quality of Life Perceptions

**NORMAN WALZER, PH.D.** - Professor of Economics at Western Illinois University in Macomb, Illinois.

Norman Walzer, Ph.D., is also past director of the Illinois Institute for Rural Affairs (IIRA) at Western Illinois University in Macomb, Illinois. He is currently completing an analysis of the Illinois Rural Life Poll focusing on quality of life and satisfaction with local service delivery.

"In the 1980s, the rural areas in Illinois, like rural areas in most other states, were seriously affected by farm consolidations and other adverse economic trends," began Walzer. Following recommendations from a statewide Task Force on the Future of Rural Illinois, in 1989 the Illinois General Assembly funded the IIRA. "The mission," Walzer continued, "is to improve the quality of life in rural Illinois by partnering with public and private agencies on local development and enhancement projects." The vision of the IIRA, he explained, is to attain national recognition for an integrated delivery system that provides knowledge, information, and innovative strategies to help rural residents improve policy decisions, overcome rural disparities, and achieve a high quality of life with strong communities.

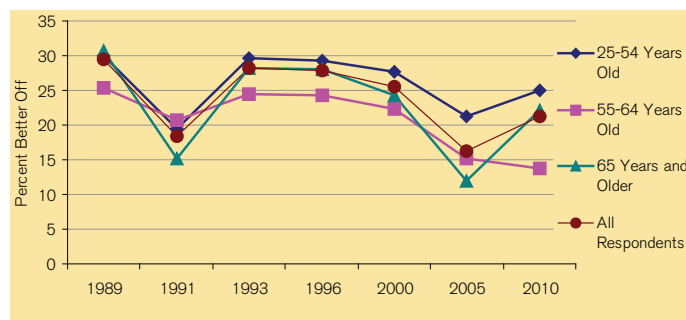
The IIRA also conducts applied research projects on a variety of issues facing rural Illinois, such as: economic and community development (including value-added agriculture), health care, education, public transportation, public management policies, housing, and technology.

Walzer presented findings of an IIRA survey conducted in 2005 on rural quality of life perceptions. The survey asked rural residents how their quality of life has changed between 2000 and 2005 and about their perceptions for the next five years.

Referring to Figure W1, Walzer reported that 2010 projections based on the question, "In the next five years, will the quality of life in your community improve?" are especially troublesome for the 55- to 64-year-old age bracket. The group perceives that the quality of life in its communities will not improve. However, the elderly (65 years and older age bracket) are more positive. Walzer noted that, over time, the responses for the 25- to 54-year-old age bracket tend to mirror broader macroeconomic performance.

The survey also included measures of how satisfied rural people are with the services they receive. Referring to Figure W2, Walzer reported that rural residents are more satisfied with local libraries, parks and recreation, and schools than with retail shopping, public transportation, and entertainment options.

**Figure W1: Community Quality of Life has Improved (during past five years)**



*Note: 2010 projections based on "In the next five years will the quality of life in your community improve?"*

Source: Illinois Institute for Rural Affairs

**Figure W2: Satisfaction with Services**

Service	All Respondents Mean
Library services	4.14
Parks and recreation	3.89
Education (K - 12)	3.82
Solid waste disposal	3.76
Senior centers and services	3.64
Housing	3.64
Law enforcement	3.63
Head Start programs	3.60
Basic medical care services	3.51
Day care services	3.46
Streets	3.19
Quality of public services	3.18
Mental health services	3.11
Local government	3.06
Restaurants	2.98
Responsiveness of state agencies to local requests	2.77
Retail shopping	2.74
Public Transit and Transportation	2.73
Entertainment	2.64

Coding: 1= Very Dissatisfied  
5= Very Satisfied

Source: Illinois Institute for Rural Affairs

The survey then asked about positive and negative trends. According to responses, the biggest concern is a lack of jobs that pay a "living wage." A related concern is the closing of small businesses and erosion of main streets. Also, quality of rural schools has traditionally been an issue, with concern over the number and types of courses available and whether rural education adequately prepares children for the future.

Walzer also discussed factors important to businesses deciding whether to locate in a rural area (see Figure W3) and the possible role quality of life plays in those decisions. Labor costs, highway accessibility, availability of skilled labor, and state and local incentives were all important factors; however, labor costs are, by far,

the most important, he said. "Labor costs mean labor productivity costs," explained Walzer. "Schools are important here because they are preparing the workforce for the future and will affect the ability of local areas to attract high paying jobs. Quality of the workforce is a continuing concern of businesses."

### Figure W3: Site Selection Factors in Industrial Location

Percent Responding as Important or Very Important

Labor costs	96.4%
Highway accessibility	90.2
Availability of skilled labor	89.1
State and local incentives	87.5
Energy availability and costs	85.8
Corporate tax rate	84.4
Occupancy or construction costs	83.6
Tax exemptions	83.3
Availability of telecomm. services	82.3
Availability of high-speed Internet access	80.7
Environmental regulations	80.7

Source: Illinois Institute for Rural Affairs

**MICHAEL L. WHITE - Specialist for Iowa University Extension Field Corps/Viticulture**

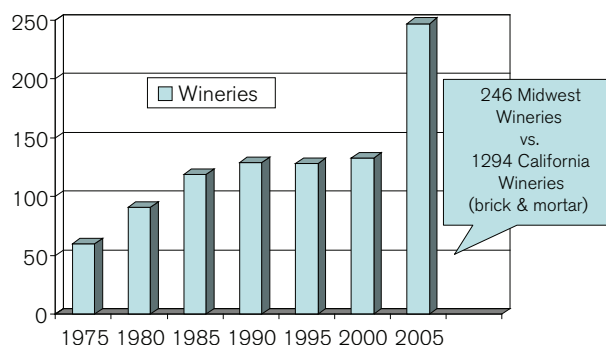
### Wineries and Rural Economic Development

Michael L. White is an Iowa State University Extension Field Crops/Viticulture specialist.<sup>17</sup> For the past 10 years, White has worked with conventional and alternative crop farmers in southwest, south central, and central Iowa. In January 2000, he began working with the newly emerging grape and wine industry in Iowa.

Historically, Iowa had been a significant grape producer. In 1919, Iowa was the sixth largest grape producer in the nation.<sup>18</sup> White explained that several factors negatively impacted Iowa's grape growing industry. First, came the national prohibition on alcohol (1920-1933). Because a family unit could still produce and possess 200 gallons of alcohol and wine each year, prohibition had only a minor effect on grape and wine production. A second, and much larger impact on Iowa's wine growing industry, was wrought by the Armistice Day blizzard of November 11 and 12, 1940. The huge blizzard fell so suddenly it destroyed a large number of Iowa's vineyards (and orchards). Finally, the most significant blow was dealt by the advent of 2,4-D herbicide in 1944. This herbicide is highly volatile and once sprayed vaporizes into the air and drifts. Grapes are very sensitive to this herbicide. After World War II, 2,4-D herbicide was extensively used in Iowa corn production and consequently devastated grape production. By 1954,

no vineyard in the state was free of 2,4-D damage. Today, however, there are practices in place that minimize drifting of the herbicide.

### Figure M1: Iowa, Nebraska, Illinois, Indiana, Michigan, Minnesota, and Wisconsin Wineries



Source: Iowa State University, University Extension, and WineAmerica 75-00, State Associations for 2005

As Figure M1 shows, the number of wineries in the Midwest has exploded over the past five years due to the recent renaissance in the wine industry. White attributed the robust Midwest growth primarily to the development by several leading universities over the past 10 years of new grape varieties that can be planted for wine production. "There are now about 30 varieties available for planting in the Midwest – formerly it was two – Concord and table grapes," he said. "It's a new industry with new grapes, and we're seeing quite a few new wineries come online."

Iowa has been one of the fastest growing states for a number of reasons, the biggest being the Iowa Wine Growers Association.<sup>19</sup> The group has been very active in lobbying for laws and regulations to enhance the industry. As Figure M2 illustrates, since 1999, Iowa has seen a dramatic increase in the number of wineries, vineyards, and acres planted.

### Figure M2: Recent Iowa History

Approximate Wine Grape	Acres &	Vineyards	Wineries
1999	31 acres	15	13
2000	100 acres	50	14
2001	200 acres	100	16
2002	400 acres	200	18
2003	450 acres	225	26
2004	500 + acres	231 +	33
November 2005	600 + acres	275 +	51

Source: Iowa State University, University Extension



The wine industry represents rural economic growth. Vineyards and wineries provide tourism. In California, wineries were second only to Disneyland for the number of visitors in 2004. "Its all about destinations and traveling," explained White. "The typical wine trail visitor will drive about 100 miles per day to visit wineries. So, if you're going to position a winery, you want it within 50 miles of an urban population center." Economic studies conducted in other states indicate that for each dollar spent in a winery, there is a concomitant \$0.75 to \$1.00 spent locally. Wineries have proved to be an outlet for locally produced cheeses, honey, catering, and food services and also provide the venue for many cultural activities such as summer festivals. "This is the epitome of value-added agriculture," White noted. "One dollar worth of grapes will produce about \$10 worth of retail wine sales." White also added that the wine industry is not subsidized as other Iowa agricultural industries are. Yet, a typical vineyard in Iowa that produces about 3.5 tons of grapes will pay about \$2,500 to \$3,500 in taxes (local, state, and federal) per acre each year.

# Infrastructure in Rural Areas: Economic Opportunities

**Moderator – Thomas W. Farmer, Ph.D., Director of the National Research Center on Rural Education Support**

The Future of Economic Development in Rural America

## Rural Education

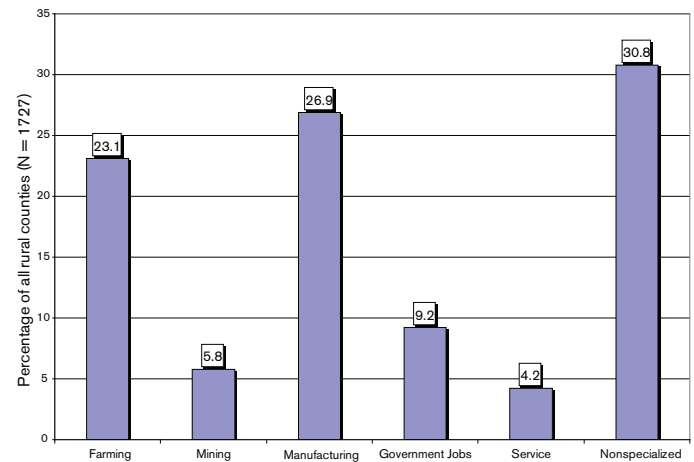
This panel brought together an expert group of speakers who have success stories of developing innovative approaches to promoting economic development in rural areas. Thomas W. Farmer, was the moderator.

Farmer is director of the National Research Center on Rural Education Support, which was established by a grant from the U.S. Department of Education to the University of North Carolina at Chapel Hill, to create and evaluate professional development and distance learning programs relevant to the needs of diverse rural communities across the United States. Farmer is also director of the Social Development and Intervention Research Program at the Center for Developmental Science, as well as an associate professor in the School of Education at the University of North Carolina at Chapel Hill.

Farmer first explained that rural education appears very different from one community to the next because it reflects the characteristics of each individual community. *Rural*, he said, can refer to very disparate areas. Some areas share many commonalities, but they also possess critical differences that impact key outcomes. To illustrate this disparity, Farmer briefly outlined some of the various issues in rural areas where he has worked. Rural Alabama has a population that is predominately Black and suffers from poverty rates of over 60 percent. There is typically no work available for these rural individuals who have children in the local schools. In Maine, fishing in the offshore island community is the only resource available, and the rural island schools have issues revolving around their high dependence on the mainland. His work in Appalachia revealed pockets where there is depopulation due to the decrease in farming and mining. "Educational needs and issues are very localized and diverse, and there is no one-size-fits-all solution," Farmer said.

Farmer used charts to demonstrate the differences between rural counties. These charts analyzed rural counties by: primary economic dependence, sociodemographic characteristics, and high school and college completion rates.

**Figure F1: Rural Counties in 2004 by Primary Type of Economic Dependence**

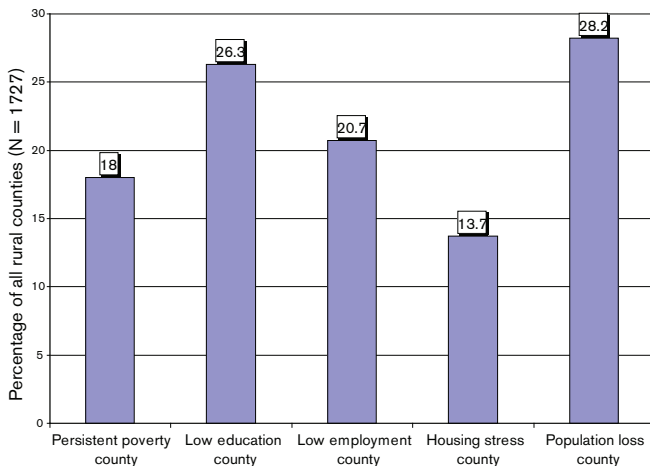


Source: National Research Center on Rural Education Support, U.S. Census Bureau and Economic Research Service, USDA

Figure F1 illustrates the economic dependencies of rural counties. The chart illustrates that the economic dependencies vary widely: 23.1 percent of rural counties are dependent on farming; 5.8 percent on mining; 26.9 percent on manufacturing; 9.2 percent on government; 4.2 percent on service; and 30.8 percent were dependent on nonspecialized areas (the counties did not meet the dependence threshold for any one of the previously mentioned industries).

Figure F2 illustrates key sociodemographic and economic indicators. The chart shows that 18 percent of rural counties in the United States are identified as "persistent

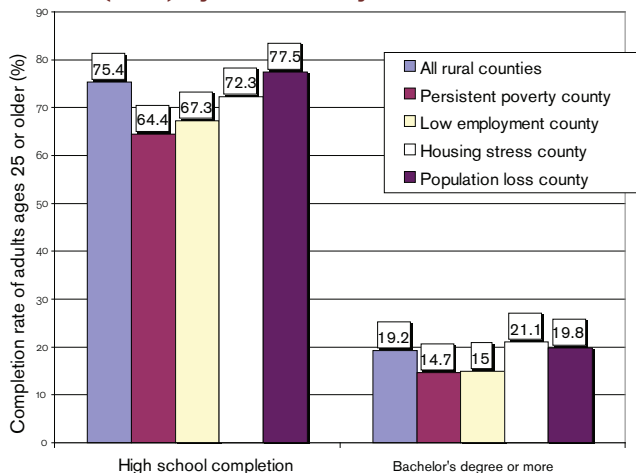
**Figure F2: Rural Counties by Key Sociodemographic and Economic Indicators**



Source: National Research Center on Rural Education Support, U.S. Census Bureau and Economic Research Service, USDA

poverty counties,” meaning that 20 percent or more of residents were poor as measured by each of the last four censuses: 1970, 1980, 1990, and 2000. Of the counties, 26.3 percent were “low education,” meaning that 25 percent or more of residents 25 to 64 years old had neither a high school diploma nor GED in 2000. Another 20.7 percent were “low employment counties,” meaning that less than 65 percent of residents 21 to 64 years old were employed in 2000. Another 13.7 percent were “housing stress counties,” meaning that 30 percent or more of households had one or more of these housing conditions in 2000: lacked complete plumbing, lacked complete kitchen, paid 30 percent or more of income for owner costs or rent, or had more than one person per room. Finally, 28.2 percent were “population loss counties,” meaning that the number of residents declined both between the 1980 and 1990 censuses and between the

**Figure F3: High School and College Completion Rates (2000) by Rural County Indicators**



Source: National Research Center on Rural Education Support, U.S. Census Bureau, and Economic Research Service, USDA

1990 and 2000 censuses. “What I want you to take away from this graph,” said Farmer, “is that there is tremendous variation between rural counties in terms of the types of issues they face.”

Figure F3 shows that persistent poverty and low employment are clearly associated with lower rates of high school and college completion. Farmer noted that the population loss counties are counter to what one might expect, those with the highest rates of high school and college completion. What this means is that in the economically depressed counties, people with lower rates of education are staying. It also shows that those leaving are the people who can – because they have the education and the resources to seek reemployment elsewhere.

Farmer summarized some of the key education issues facing rural communities:

- **Teacher retention** – “What we’re finding in rural America, particularly in the Midwest, is that there is this huge concern about losing teachers. Places like North Dakota lose teachers just as fast as they hire them,” he said. He cited teacher retention as the biggest concern and stated that the ability to resolve the strain placed on rural teachers will impact whether teachers will stay in rural schools.
- **Teacher quality and professional development** – “Because of issues of ‘critical mass,’ it is difficult to get professional development training to rural teachers,” Farmer said. Technology may hold the answer through distance learning, by utilizing the Internet to improve teacher quality and professional development at geographically isolated rural schools.
- **Consolidation vs. preserving communities** – One of the huge issues in rural education is the concern about the trend toward increasing school consolidation, Farmer explained. Critics of consolidation feel that as smaller schools are folded into much larger ones, the small communities who lose their schools also lose their identity. In many smaller towns, the school is the only community resource.
- **Standardized vs. placed-base curriculum** – The issue here, Farmer explained, is the tension between using a nationally standardized curriculum versus one that is determined locally and how the curriculum choice impacts achievement indicators for all students. Critics of a universal standardized curriculum state that rural students should be free to learn subjects that are locally applicable and that will help them be economically successful in the community.

- **Geographical isolation and technology** – Technology has been a big benefit to rural schools and virtually all are connected to the Internet, Farmer said. However, the problem involves using this connectivity in a manner that actually supports student and teacher instruction and training.

Farmer also discussed the role of rural schools in economic development, emphasizing that rural schools must view themselves as partners with local government and business leaders. One of the school's primary missions is to prepare the future workforce. Farmer cautioned that all the data collected on this topic is anecdotal; however, it appears that school districts where there is economic growth, no depopulation, and teacher stability are the ones that frequently interact with local businesses and government. Collaboration focus on what schools can do to develop the workforce and help attract new businesses to the community.

### Guiding Principles of Strong Rural Development

**STEVE E. KLINE - President and Chief Executive Officer of the Economic Development Group, Ltd. (EDG), Bloomington, Illinois** <sup>20</sup>

Steve E. Kline serves on the board of directors for Illinois Rural Partners, the state rural development council representing the state in the National Rural Development Partnership of the U.S. Department of Agriculture. In 1998, Kline facilitated a statewide strategic visioning and planning project commissioned by Rural Partners and the Illinois Institute for Rural Affairs, which yielded a comprehensive report titled, *Building a Brighter Future for Rural Illinois: Goals for Stronger Communities*.

Kline discussed the fundamentals of strong rural development and three local economic development tools available within Illinois. "The future of economic development in rural America offers much opportunity for positive growth and change," he began. "Scores of rural leaders are discovering innovative ways to increase economic competitiveness through public-private partnerships and the use of local incentives to attract new investment, reduce economic development costs, and grow businesses in their communities."

According to Kline, leadership, economic vitality, and an increasing quality of life in rural America are not only achievable, but also essential to the long-term health and welfare of the country. Kline summarized seven guiding principles of strong rural development.<sup>21</sup>

1. **Local Solutions:** With public and private leadership, community-based planning, and capacity-building, successful rural development will occur from a social, physical, and financing perspective.

2. **Informational Resources:** Leadership capacity and effective community decision-making are enhanced through the use of timely and accurate information resources. Affordable access to information technology is essential.
3. **Recognized Measures of Success:** Continuous improvement in the condition of rural communities must be monitored using appropriate measures of success, particularly in evaluating public sector involvement.
4. **Problem-solving Networks:** The creation of environments that foster cooperation between rural leaders and public and private resources is essential.
5. **Stronger Foundations for Growth:** Six basic foundations for growth must be strengthened to improve the competitive positioning of rural communities:
  - a. A skilled and adaptive workforce
  - b. Access to capital for business growth and expansion
  - c. Necessary basic and advanced infrastructure
  - d. Access to technology and business modernization resources
  - e. Pro-competitive policies affecting the rural business climate
  - f. Social, cultural, and physical amenities necessary for a high quality of life
6. **Greater Business Growth Opportunities:** The competitive positioning of rural businesses will be improved by strengthening ties to foreign and domestic markets.
7. **Options for Rural Residents:** Residents of rural communities must be enabled to plan successful futures through access to the opportunities and resources needed to make early choices for advancement.

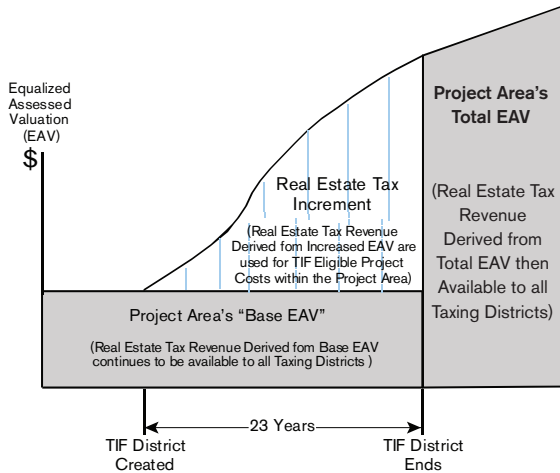
He also discussed three primary Illinois economic development tools:

- **Real Estate Tax Abatements** – The bottom line on abatements is that they are voluntary and available only to the extent that the overlapping taxing districts agree to abate taxes. "It is often very difficult to forge the needed agreement of all or some taxing districts, especially during tight budgetary times like we're in now," Kline said.
- **Enterprise Zones (EZ)** – Enterprise zones involve the abatement of local real estate taxes, plus state sales and local sales tax waivers on materials bought within the EZ.<sup>22</sup> The zones require specific agreement by all (or some) taxing bodies for the

abatement of real estate taxes for a given length of time (usually 10 years and with a decreasing abatement over that period).

- **Tax Increment Financing Districts (TIF)** – A TIF is a program of real estate tax rebates created by the Illinois legislature and approved by Governor Dan Walker in 1976. As of March 2005, there were three types of TIF districts in Illinois (state sales tax, regular, and Industrial Jobs Recovery Law). Figure K1 illustrates how a TIF works in Illinois.

**Figure K1: How TIF Works in Illinois**



Source: Steve E. Kline presentation 11/17/2005.

Kline ended his remarks by stating that leadership, economic vitality, and an increasing quality of life in rural America are very achievable. He emphasized that regardless of their approach, economic opportunities in rural America should always seek to balance the needs of the community against the interests of the investor. "Our rural towns and villages deserve the opportunity to take control of their future and shouldn't simply settle for allowing the future to happen to them," he noted; "and it is the courage to keep working toward this goal that really counts."

### Harnessing Biodiesel for Rural Economic Development

**JEFFREY STROBURG - President and Chief Executive Officer of West Central Cooperative, Ralston, Iowa**

West Central is one of the largest 20-grain companies in North America. Jeffrey Stroburg discussed utilizing biodiesel fuel as an economic development opportunity for rural communities and, specifically, how farmers can take equity out of their land and put it into biodiesel.

"Biodiesel is a fairly new entrant into the renewable fuels market," Stroburg explained. "Ethanol has been around in a major way since the 1970s and has really paved the

way for biodiesel." West Central has been producing and marketing biodiesel since 1996. Stroburg offered the following definitions:

- Biodiesel is a fuel made from vegetable oils, animal fats, and recycled cooking oil.
- Soy biodiesel is a fuel made from soybean oil.
- "B2" is a fuel blend of 2 percent biodiesel with 98 percent petroleum diesel.

Stroburg also explained the various advantages offered by biodiesel:

- **Reduced Emissions** – In 2000, biodiesel became the only alternative fuel to meet EPA Health Effects Testing under the Clean Air Act. Carbon monoxide emissions were 50 percent lower than with petroleum diesel; particulate matter was 30 percent lower than with petroleum diesel; and hydrocarbons were 93 percent lower than with petroleum diesel.
- **Operational Benefits (Lubricity)** – One of the unique qualities that biodiesel provides as a renewable fuel is lubricity. B2 has 66 percent more lubricity than #2 petroleum diesel. Exceptional lubricity means longer engine life and superior engine performance. As an aside, Stroburg noted that when Adolf Diesel first invented the diesel engine over 100 years ago, he envisioned that it would run on vegetable oil.

- **Energy Balance** – Energy balance refers to the amount of energy required or consumed in order to create or produce more energy. Stroburg explained that every one unit of energy consumed when creating soy biodiesel yields 3.24 net units of energy. This compared to a 1.35 net gain for ethanol and a ratio of one unit of input for petroleum yielding a net return of .88 units. "So as we look at the energy balance, renewable fuels make sense," he said.

- **Expanded Use of Soy Crops** – As more soybeans are raised in Brazil and Argentina, U.S. farmers' traditional markets are being challenged. Soy biodiesel is a great way to increase demand for locally grown crops. One bushel of soybeans creates 1.4 gallons of pure biodiesel (B100).

- **Nation's Energy Goals** – One of the ways to be less reliant on imported petroleum is to increase use of domestically produced renewable energy resources. "We can make our gasoline from ethanol and our diesel from soy diesel – all from crops grown here in the United States that are renewable year after year," Stroburg explained. "Whether its diesel or biodiesel, gasoline made from petroleum or ethanol made from corn – they're all hydrocarbons. The

choice facing our nation today is whether we're going to use old hydrocarbons made from petroleum or new hydrocarbons that we grow right here in the farm fields of the Midwest."

Biodiesel is used in several commercial applications, Stroburg explained. Major users include the Defense Department, school districts (for buses), farmers, and mass transportation systems. An added benefit of biodiesel is less environmental problems related to water because, unlike petroleum, which floats on top, biodiesel emulsifies and mixes with water.

Current annual U.S. demand for diesel is 55 billion gallons, which is growing by about 5 percent per year. If 2 percent of this market were replaced by biodiesel, then about 1 billion gallons of biodiesel would be needed. Right now, annual U.S. production of biodiesel is about 150 million gallons. But there is an excellent demand potential. Biodiesel, for example, can be used in a blended formula for home heating oil. It is becoming especially popular in the Northeast, which uses a higher percentage of home heating oil than the rest of the country because the region's rocky terrain makes natural gas pipeline networks uneconomical. Because biodiesel is a natural solvent, the use of a 20 percent blend for home heating oil actually cleans the furnace burners, whereas a furnace that burns traditional heating oil needs to be cleaned regularly at the cost of about \$50 per cleaning.

Although its current main product is biodiesel, a soy biorefinery can make many more products, such as: a diesel additive, a seed treatment, wheel grease, chain bar lubricant, asphalt release concentrate, hydraulic oil, wood preservatives, graffiti remover, and paint stripper. The refinery can make use of the "meal" side of the bean (as opposed to the oil) to make various soy food products. A further byproduct of the refining process is glycerin, which is currently made into products such as hand creams, toothpaste, cosmetics, and various food products. New uses may soon be fibers for carpet and plastics, antifreeze, and pet food and livestock feed.

Stroburg also discussed how biodiesel could be used as a rural development tool. A 30-million-gallon plant will cost about \$40 million to build. Each plant employs 20 to 25 people and will also create additional external jobs, such as with transportation and plant repair and maintenance, that support the plant. Further, a new plant increases the tax base of the community and provides local investment opportunities.

"This is a key element which is sometimes overlooked," Stroburg pointed out. "Are there opportunities for farmers and others who have all their equity in land to diversify that equity into other investment opportunities? Biodiesel creates an investment opportunity that is a local investment, but also allows farmers and those

involved in agriculture in rural areas to diversify some of their investments. So I believe that when you look at the additional demand for agricultural products and all the other things involved, biodiesel can and will play an increasingly important role in rural economic development."

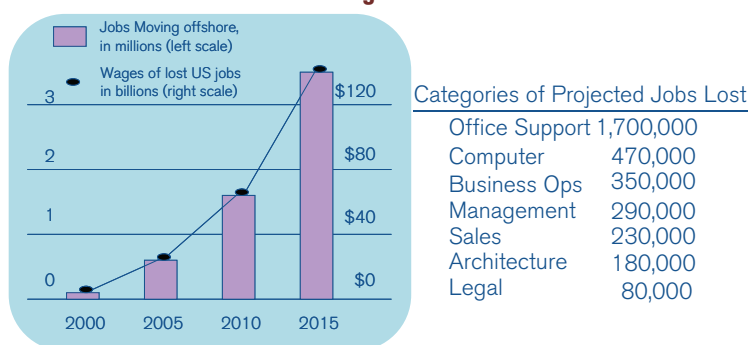
## Outsourcing to Rural America

**KEN YORGENSEN - Senior Vice President of Technology at Rural Sourcing, Inc (RSI), Durham, North Carolina<sup>23</sup>**

Ken Yorgensen currently serves on the board of The Center for Bioscience and the Integration of Computer and Telecommunications Technology (BioCATT) located on the Kenosha, Wisconsin campus of Gateway Technical College.

Rural Sourcing is a start-up company that provides high-quality information technology (IT) services at a cost saving by locating in lower-cost rural regions of the United States. "What we're about is job creation," Yorgensen said. His remarks focused on the globalization of jobs and its impact in the United States. Yorgensen paraphrased the late Peter Drucker, known as the father of modern management, by noting that the information age economy is about moving work to people (by moving ideas and information) versus moving people to work, the traditional model.

**Figure Y1: The Wall Street Journal "States Fight Exodus of Jobs, Lawmakers, Unions Seek to Block Outsourcing Overseas"**



Source: Rural Sourcing Inc.

As the graph in Figure Y1 shows, by 2015 over three million U.S. jobs will move offshore. This is projected to have an impact of about \$120 billion on U.S. workers' payrolls. According to Yorgensen, since 2001 well over 400,000 IT jobs in the United States have disappeared. Although he attributes some of the loss to the late '90s Internet bust, a good portion of the loss represents many jobs going overseas to places like India, China, Russia, and Poland. Technology has allowed IT jobs to migrate

to these countries because they have a well-educated workforce and are making significant investments in infrastructure (especially India and China), he explained. One of the biggest challenges for RSI is that these countries are able to provide IT services at a much lower cost, especially with regard to workers' wages.

In spite of the cost-savings benefit, there is a downside to offshoring jobs, both in terms of risk and practicality. Risk factors include: geopolitical issues (other countries are not always stable); intellectual property (copyright and patent protections are not always strong for products developed domestically and marketed overseas); and vendor performance and project management (meeting deadlines and specifications despite cultural differences). Practical considerations include physical distance and language and time zone differences.

In addition to IT cost savings, businesses want control over project deliverables and priorities, Yorgensen continued. Businesses also want their IT workers to be engaged and understand the client's business process. And, they want security – privacy protection for information and data. "And, we think that by driving this business opportunity to rural America we can deliver," Yorgensen said.

Yorgensen noted the advantages and disadvantages of operating in rural versus urban America. The advantages include: lower cost of living, better quality of life, improved safety, a strong work ethic, and an untapped labor force (many students want to stay in their home communities but are forced to move to urban centers to find work). Disadvantages include: image—rural areas may be seen as unsophisticated and devoid of shopping and cultural opportunities; lack of population, yielding a slower pace and lifestyle; and technology and marketing—implementing IT infrastructure and educating people about it. RSI provides its IT services at a 30 to 50 percent cost savings below that of a metropolitan area. "We cannot compete directly with offshoring in India and China because we pay our people a lot more than \$6,000 per year," Yorgensen noted. "But we can compete with the metropolitan areas." While he said RSI's business model supports rural economic development, he said making it work requires partnership by local community and business leaders and leadership from academic institutions who are producing IT graduates.

# Keynote Address

Remarks by Thomas J. Vilsack  
Governor of Iowa



## Introduction

Jeff Plagge, president and CEO of The First National Bank of Waverly and Class A director of the Federal Reserve Bank of Chicago, introduced Iowa Governor Thomas J. Vilsack, who was elected in 1998 and is currently serving his second term. Plagge said Governor Vilsack fully understands rural Iowa and rural development. He pointed out that not only is Vilsack the governor of a rural state, but before he entered into Iowa politics, he lived and worked in a rural Iowa community, so he has experienced the challenges of rural America at multiple levels. Plagge also noted that defining “rural development” is somewhat like defining the “family farm” – everyone has his own definition and biases. However, he said, rural development can only come about through collaboration. He believes that Vilsack has worked hard to foster partnerships within the state, such as the Iowa Values Fund and the Vision Iowa Program. These and other local and regional partnerships are making a big difference in the state of Iowa, Plagge said.

### *Iowa Governor Thomas J. Vilsack's Remarks*

Jeff, thank you very much.

Not only do we appreciate those Illinois dollars coming across the border, but also we really appreciate that Illinois football team coming over from time to time.

I, too, want to thank the Federal Reserve Bank of Chicago for hosting this conference on rural economic development, and I appreciate the fact that there are visitors from a number of states here. But this does give me an opportunity to talk about the state of Iowa, its past, the current situation in our state, and what steps we need to take in the future.

And I think what I have to say about the state of Iowa is applicable to states all across the Midwest. I appreciate the fact that there are in the audience today, a number of members of the Iowa legislature, who share in a desire for

this state to grow and expand and for the rural economies of this state and all of the Midwest to continue to expand.

As of today, our state is but 1,700 jobs away from having a record number of employed Iowans. Our unemployment rate is below the national average. Iowa is an exporting state. In the last year, exports from Iowa grew by 22 percent – compared to the national average of 13 percent. This represents an increase to \$6.4 billion. Our manufacturing employment growth activity as reported by the Bureau of Labor Statistics also grew at a rate higher than the national average, in each of the last five quarters.

Iowa has the fastest growing economy in the Midwest and the eighth fastest growing economy in the entire country. Wage and salary income grew in our state at a rate higher than the national average in 11 out of the last 12 quarters. And last year, the state of Iowa's income growth ranked second in the nation in percentage increase.

More jobs, more exports, more growth, more income. I would suggest to you that there are many reasons for this success story, and many reasons why we need to continue on this pathway to a stronger Iowa that is marked by innovative people and creative economies and communities.

Government has a limited but important role, and to point out how it has played a limited but important role in this growth, let me point to a number of activities that the state has taken to date and the impact of those in rural communities. Working with the Iowa Legislature and the Iowa utility companies, Iowa embarked on a strategy to become energy independent. Six years ago, the state was importing energy and exporting dollars. As a result of innovative legislation and regulatory reform, the state now has six new power facilities either constructed or under construction. This will mean that the state of Iowa will become a net exporter of energy and an importer of resources. This led to over \$2 billion of economic



activities, and many of these facilities are located in small communities in rural Iowa.

The state recognized the need for expanded venture capital in an effort to promote small business development. The legislature, working in conjunction with the business community, provided a series of incentives and opportunities, tax credits for investors, a community venture capital fund, and tax relief for those who invest in it, working with our insurance industry to create an \$84 million resource for small business development, and the creation and funding of the funds.

Mention was made of a program called Vision Iowa. Recognizing that a creative economy requires creative, innovative people, we embarked on an effort to try to create cultural and recreational opportunities in small communities across the state, as well as some of our large urban centers. We leveraged approximately \$250 million of state resources over the last five years to fund 200 projects and communities, large and small. Over \$2 billion in construction has led to a renewed sense that Iowa is on the move. This, in turn, has encouraged many of our college-experienced workers who want to be part of Iowa's future. In the last two years to three years alone, we have seen an increase by roughly 3 percent of our workforce of college educated and experienced workers. This represents approximately 45,000 additional people in the workforce with higher educations.

Mention was also made of our Values Fund. A commitment of resources over the next several years to try to grow businesses in the state, try to link our university systems to business development, and to try to empower our community colleges to do an even better job of worker training. Today, 333 projects have received investments from the Values Fund, retaining or creating 20,679 jobs, leading to over \$3.7 billion of capital investment. Jobs paying \$38,000-plus with benefits – good paying jobs that support families and communities.

The legislature has also worked with our administration to develop regulatory reform that makes sense by deregulating the telecommunications industry – we are seeing an expansion of Internet access throughout the state. A recent report indicates that over 70 percent of Iowans have access to high-speed Internet. We are also working on limiting the amount of permitting time it takes to secure necessary permits from state agencies. Time is money. I recently was talking to a group of individuals who were starting a company in rural Iowa relating to renewable fuels. They remarked how important it was that permits could be approved in a matter of weeks or days compared to a competing state, where it would take literally months to get that approval.

The state has also actively pursued leveraging of federal resources in small, rural areas in an effort to try to

promote higher income for our farm families, aggressively promoting buffer strips of wetland restoration, and using wind energy tax credits, ethanol and soy diesel tax credits to promote new opportunities in our farm fields – turning them from farm fields to energy fields.

We have aggressively pursued an effort, both in the state in terms of increasing the demand, but also the supply of renewable fuels. We now have 20 ethanol plants currently in operation in our state with another six being constructed. Today, one billion gallons of ethanol is being produced in our state. Within six months, that will be 1.5 billion gallons. We rank first in the nation in ethanol production. We have gone from 50,000 gallons of soy diesel being produced in our state to, within the next six months, 100 million gallons – also ranking Iowa first in the nation. Iowa now, because of the promotion of wind energy, is the third leading producer of wind energy in the country.

But there is more work that needs to be done, which is why we asked the Battelle group to assist us in analyzing the Iowa economy and determining what made sense for development in rural communities and urban centers. They suggested that there were three clusters or segments of the economy that our state was particularly suited to take advantage of. And I suspect that these three clusters are also areas of opportunity for states in the Midwest – biotechnology, advanced manufacturing, information solutions, and financial services. It also suggested that we focus on creating clusters within clusters by linking suppliers and customers, providers of services and goods. In order for us to continue the progress that the state has seen over the last several years, we need to continue to build on the innovative economy.

Now, my remarks today are going to be focused specifically on economic development. Had I had the time, that is, all afternoon, we could have talked about education reform and health care reform and government's reform, all of which are important to the future of this state and to the future of the Midwest. Over the course of the next several weeks, I will be outlining a series of proposals in those three areas, but for today, the focus is on economic development. And specifically, the recommendations of the Battelle group, and particularly in two of the three areas I mentioned – biotechnology and advanced manufacturing.

Let me read this quote to you from the National Innovation Initiative Report, issued by the Council On Competitiveness about six months ago. The report was an outline of the steps that this nation needed to take in order to have a sustained economy. It started off with this: "The legacy America bequeaths to its children will depend on the creativity and commitment of our nation to lead to a new era of prosperity at home and abroad."

America's challenge, and I would suggest to you, the Midwest's challenge, Iowa's challenge, is to unleash its innovative capacity to drive productivity, a standard of living, and leadership in global markets. At a time when macroeconomic forces and financial constraints make innovation-driven growth a more urgent imperative than ever before, America's business, government, workers, and schools face an unprecedented acceleration of global change, relentless pressure for short-term results, and fierce competition from countries that seek an innovation-driven future for themselves.

Over the next quarter century, we must optimize our entire society for innovation. Some of you may have had the privilege that I have had, which is to travel overseas, to see firsthand the competition. Before I go into the recommendations that I suggest for the next steps for Iowa, let me share with you two very brief observations of that trip that I took recently to China, because they are instructive regardless of where you live in the United States.

One was to a great manufacturing facility in Bay Province, China. It is a province of 65 million people. The brake manufacturing facility was operating on a Saturday when we visited. It provides brake pads for 20 automobile companies, including some that manufacture cars in the United States. As I walked through the plant and I watched the individuals working, I asked the supervisor exactly what they were paid. "How much did these workers make?" I asked. The supervisor turned to me with a great sense of pride, and she said, these workers are among the best-paid people in our province, and in our country. I said, how much do they make? And she said, \$150 U.S. per month. That is the competition that we face. \$150 U.S. per month.

So I went to a school while I was visiting China, a school of 8,000 students of pre-K to the equivalent of our junior year of high school. The first thing I learned about this school was that students in this school, which was essentially the equivalent of a public school, were learning not their first but their second foreign language in second grade. They begin taking English when they start school, and by second grade, they are given the option of learning Spanish or Japanese. By the time these youngsters are in the equivalent of our junior high school, they are taking introductory physics and chemistry, and for each year thereafter, they continue to take science courses. By the time they reach the equivalent of our junior year in high school, those youngsters will spend roughly 18 months more in school than our children. For every one of our youngsters graduating from one of our universities or colleges, today in China, three Chinese students will graduate, and three, from India.

None of that was as frightening to me as the following. The principal of the school turned to me, and she said, "We are very proud of our school. We have one challenge. And we are working on it."

And I said, "What is that?"

And she said, "We want to learn how to teach 'creativity.'"

Ladies and gentlemen, if the competition ever learns how to teach creativity, we are really in for a challenge. It is important and necessary for us in this state, in this sector of the nation, and our entire nation, to understand that the future economies must be driven by innovation and creativity. That is our single advantage. The day and age of low-cost, high-quality, rapid product deployment and development in large areas and markets is no longer sufficient to win the game. That just gets you in the game. You win the game by being innovative.

For us, in the state of Iowa, it means innovation in biotechnology, and specifically, in three areas. Biotechnology is a very large field. It includes many, many opportunities, but for the state of Iowa and for the Midwest, there are three in particular that make sense. Iowa is one of six states in the country with a critical mass of activity in the ag sector of biotechnology, and by that I mean, new farming and food production, processes and systems, and technologies, and steps taken to advocate additional health and nutritional opportunities from the food that we produce. We also have an advantage in plant science, which is the activity designed to improve the effectiveness, the efficiency of plant production, and the utilization of crops in a variety of different ways. You may not appreciate this, but there are roughly 3,500 ways to use a kernel of corn. Virtually everything in this room today can, and to a certain extent, is being made from corn in our state. The clothes on your back, there are companies today that are making shirts and socks from corn. The table that you are sitting at, there's a furniture company that is making corn-based furniture. There are efforts to substitute plastic for corn-based products, and, in fact, there is now research and technology allowing us to grow polymers and switchgrass, and corn. The bioeconomy has tremendous opportunities for innovation and success.

Equally powerful are the opportunities to use animal production systems, transgenic animals and cloned animals, to produce new materials, new chemicals, new products to grow an economy, all of which, by the way, can make us less dependent on foreign oil, which is good for the environment and good for national security.

Now, in order to take advantage of the opportunities in biotechnology, in order to build that pathway to a stronger Iowa, we have got to take additional steps beyond what we have done.

First, we have to continue to encourage and accelerate and expand the commercialization of technologies developed on our university campuses. Small companies can grow to big companies. Small companies can start on university campuses with a great idea. The state of Iowa and the Midwestern states have to continue to invest in the expansion of these technologies. That's one of the reasons why the Values Fund is important. It also will allow us to locate those companies close to the raw materials to produce these products, which, in turn, creates more opportunity in the Midwest and in rural areas.

Secondly, we need to continue to formulate alliances between biotechnology companies, so that we can continue to develop clusters between suppliers and customers with products produced by biotechnology companies. That's one of the reasons why the Battelle group proposed, and we have followed through with the establishment of a bioalliance, and the identification of an individual in charge of that alliance, Ted Crosbie, from Monsanto, who will assist us in formulating additional policies to promote biotechnology.

We also need to continue to invest and continue to partner. The Battelle study recommended the development and the creation of an infrastructure fund to help build the platform for success. We need to create such an infrastructure fund. We need to invest millions of dollars in such an infrastructure fund, and those dollars, in turn, must be used to recruit faculty, nationally recognized faculty, to endow entrepreneurial chairs at our university campuses, and to help to fund the building and equipment of new start-up companies.

This goes beyond what we have done with the Values Fund. In advanced manufacturing, the Battelle group looked at 158 manufacturing industry sectors, identified 14 sectors within the state of Iowa that had the greatest opportunity, and specifically identified three which had the greatest potential for success: automotive precision tool making; environmental control systems; and industrial metal processing. It also identified three emerging sectors: polymers and coatings, industrial chemicals, and medical drugs and devices.

Those three emerging areas, I think, hold the greatest promise for rural development. The polymers and coatings tie nicely into biotechnology, as is the case with industrial chemicals. Medical drugs and devices tie into some of the expertise at the University of Iowa, and also allow us to begin the process of determining whether or not plants can be used as a biobase for drugs.

In West Burlington, Iowa, there's an acre of corn being grown today under very close scrutiny that provides a treatment for cystic fibrosis, that may very well be the wave of the future as we deal with issues involving the development of those crops. In order for us to take full

advantage of advanced manufacturing opportunities, there are several additional things that have to be done.

First and foremost, we have to create a lean manufacturing institute. This is an opportunity to help existing businesses continue to learn techniques and strategies that will allow them to be ever more efficient and effective. We have partnered, for example, with Lennox Industry, and the unions at Lennox, to promote lean manufacturing opportunities, which we believe over time will allow for that particular industry to remain stable and secure in our state. We must never forget the contribution that existing businesses make, and sometimes it's hard to figure out strategies that will allow them to be more effective and efficient. Encouraging them to look at the latest production technologies and strategies will be one way in which we can secure a future for them.

Secondly, we need to take the infrastructure fund that I mentioned for biotechnology and expand it to include a matching grant program for new product development. This will compliment our venture capital efforts. It will allow our universities, our private sector and government to partner, in the development and identification of new products from existing businesses and new businesses. And finally, we have to create an innovation economy and education council to continue to look for opportunities to promote innovation and creativity within the state of Iowa.

I intend to create this council by executive order. I intend to have representatives from business and labor, in the education community, as well as recent college graduates serve on this council, so that we can continue to promote innovation in the state, so we can continue to make sure education and economic development are aligned, and so we can continue to look for ways in which we can provide assistance to business development and growth.

Now, there are a lot of other things that need to be done. There are opportunities for us to continue to promote renewable energy and fuel in our state. We will work with the legislature to look at ways in which we can continue to promote the purchase of ethanol in our state and act as an example for the rest of the country. The product and the step that we took in establishing a tax credit for retailers of the product have been tremendously successful. We have created a market within our own state for the use of ethanol. We now have to figure out strategies to improve the use of other products. Our state is currently providing grants to retailers to convert their tanks. We are working with the auto dealers of this state to promote E-85 vehicles and flexible fuel vehicles, and continue to advocate for more of that technology to be developed in our nation, so that we can continue to rely upon renewable fuel.

We will continue to promote and expand wind energy, as well. We recently opened up a plant in Cedar Rapids that is going to produce turbines, very, very large turbines, which we think will be marketed throughout the West to take full advantage of wind energy. We will work with other states and have begun the process of developing standard protocols for transmission lines in terms of renewable energy opportunities.

There are a multitude of steps that have to be taken, but if you focus your resources on what makes sense, if you create clusters that have the greatest opportunity for profitability, if you continue to look for ways in which government can partner, if you continue to look for opportunities to make the regulatory burdens less, if you continue to invest in education and try to tie your education to your economic development, if you continue to look for innovative and next-step technologies and promote them, if you continue to invest in small business developments and new venture opportunities, if you continue to try to create an attractive cultural climate for college, experienced, and educated workers, you will continue to see prosperity.

I think the best days of the Midwest are ahead of us. I think there is an enormous opportunity to provide safe and secure locations. We have great natural resources that can be fully utilized by our nation. There is a growing awareness in our nation's Capitol of the importance of energy dependence, which places strength on the Midwest. We have an ethic of hard work. We understand and appreciate the value of education, and states are taking steps to tie that education into economic development. So, I am bullish on the Midwest, I am bullish on what's happening in my state, and I suspect in the states that are represented here as well.

Let me just conclude by suggesting that one other thing needs to take place in order for the Midwest to fully utilize its potential and for the state of Iowa to do so as well. And that is for us to be champions and advocates for the Midwest and for Iowa. Each of you in this room has an opportunity to visit with young people from time to time. Each of you has young people in your own life or perhaps next-door neighbors or relatives or young people that are friends of your family. Never miss an opportunity to promote the Midwest. Never miss an opportunity to point out that we live in a part of the country that is among the safest and among the healthiest and among the best educated, with the greatest opportunities. Never fail to point out the tradition of the Midwest, the fact that we have helped to feed the world. We are now helping to fuel the world, and over time, we are going to help to solve some of the health care challenges ahead of our nation and the world.

Our state, the state of Iowa, has a tremendous tradition. Henry Wallace, the developer of hybrid seed, allowed agriculture to be far more productive than it ever had ever had been. Norman Borlaug, born and raised in Iowa, educated in Minnesota, went out and created new strains of wheat, which, in turn, provided opportunities for literally millions of people to be saved from starvation and malnutrition. It is a rich history, and it is one that we can build on. It's one that has defined us in the past, and I think will define us in the future. So I appreciate the opportunity to visit with you today, and I look forward to working with states in the Midwest for a brighter and better future.

Thank you.

# 21st Century Agriculture and Energy

**Moderator – Neil E. Harl, Charles F. Curtiss Distinguished Professor in Agriculture and Professor Emeritus of Economics at Iowa State University, Ames, Iowa, and a member of the Iowa Bar Association**

## The Future of Economic Development in Rural America

Neil E. Harl said that energy ranks as one of the most critical factors in modern life because its impact is both personal and national. Conventional energy, primarily because of where it is produced, comes with substantial cost externalities, which are a major policy concern, Harl said. Although not rich in oil, Iowa and the Midwest can play an important role in the country's energy future.

Harl addressed the issue of where agriculture is headed in this century, and more immediately, over the next two decades. The answers are varied. Some believe that agriculture is not competitive and that in the near future it will cease to be part of the nation's economy. Others say that agriculture is competitive but land values must be driven down. Harl focused on where the Midwest's agriculture sector has been, where it is going, and what it holds for economic development.

"When driving up and down Iowa's country roads, today's farmsteads don't look much different than they did 80 or 100 years ago," began Harl. "But looks can be deceiving – a great deal of change has been occurring." U.S. agriculture has been through a dramatic transformation over the past 80-plus years, he continued. Much of the change is attributable to two major forces: (1) the

technology of seed and genetics, which has boosted productivity to levels unimagined 80 years ago, and (2) the technology of power, which set the stage for larger farms needing less labor to produce food. Institutional change has also played a lesser role. The result of this dramatic transformation has been an unbroken evolution of increasingly larger, but fewer, farms.

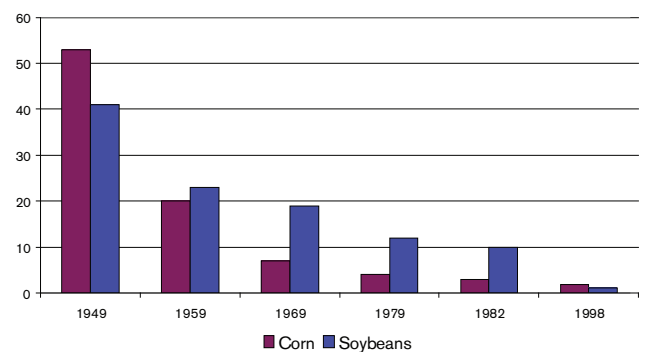
Harl cited the effects of technology on corn yields. Figure H1 shows corn yields in Iowa going back to 1866, when the average was 32 bushels per acre. By 2004, the average had skyrocketed to 181 bushels per acre. "This progress is heavily attributable to seed and genetics," said Harl, noting that other factors, including fertilizers and better management, have also contributed to the increase.

**Figure H1: Effects of Technology on Corn Yields in Iowa in Bushels per Acre**

1866 - 32bu/A	1972 - 116bu/A
1896 - 43bu/A	1979 - 127bu/A
1920 - 46bu/A	1986 - 135bu/A
1937 - 45bu/A	1992 - 147bu/A
1942 - 60bu/A	1994 - 152bu/A
1952 - 62bu/A	2002 - 163bu/A
1963 - 80bu/A	2004 - 181bu/A
1969 - 99bu/A	

Source: Iowa Agricultural Statistics

**Figure H2: Hours Per 100 Bushels in U.S. Corn and Soybean Production**



Source: Iowa Agricultural Statistics

The technology of mechanical power, explained Harl, has resulted in the massive substitution of capital for labor – setting the stage for larger and larger farms. Figure H2 shows the production hours per 100 bushels of U.S. corn and soybean production from 1949 through 1998. In 1949, it took about 54 hours to produce 100 bushels of corn and about 42 hours to produce 100 bushels of

soybeans. “We can see that the amount of labor required has diminished in a startling fashion,” Harl said. “By 1998, the numbers got down so low that the USDA stopped keeping and publishing these records.”

Harl identified international trade, globalization, and environmental concerns as the three main forces that he expects will shape the U.S. agricultural sector over the next 80 years. The major trend, he said, is an almost universal desire of consumers worldwide to live better. He predicts that food and other commodities will be produced at the lowest possible cost to the consumer. “It’s led to outsourcing of everything imaginable – development of computer software, auditing of tax returns, surgical procedures, secretarial work, and manufacturing of almost every product used by the human family – where the product or service is mobile. The trend will almost certainly continue because consumers love a deal.”

However, Harl explained that agriculture is different because soils and climate are not mobile. Therefore, crops will continue to be grown where the cost is lowest and in areas with a combination of good climate and productive soils, such as the Midwest. Although livestock is mobile, and could move offshore, large-scale outsourcing is unlikely because livestock production tends to be tethered tightly to low-cost feed grains, he said.

Furthermore, globalization is improving incomes in low-income countries where the percentage of additional income spent on food is especially high. Therefore, as incomes rise in countries devoting, for example, 75 percent of additional income to food (in the United States it’s only about 20 percent), the result will be a dramatic increase in food demand. While that’s good news for Midwestern farmers, it’s also good news for efforts to eliminate hunger and malnutrition.

A potential disadvantage of globalization, Harl said, is competition created by greater availability of trade, capital, and technology in developing countries. “That is a great worry for employees with skills in competition with those in developing countries,” said Harl. “It’s also a major reason why we simply must put more of our resources into moving labor in this country up the productivity scale – so our workers are not in direct competition with low-income peoples around the world.” Otherwise, there will be a great leveling effect worldwide, and the United States will find it increasingly difficult to maintain its higher standard of living, he said.

Harl also offered a few solutions. From a policy perspective, he said the task for the agricultural sector is straightforward – shape economic forces without losing the benefits of efficiency. To accomplish this, Harl suggested first that agriculture reduce its cost externalities (e.g., odors, and stream, ground-water, and ocean pollution, as well as pollen drift from genetically modified organisms) to acceptable levels.

Second, Harl said the benefits of federal farm programs (assuming these programs continue to exist in some form) must be crafted to erase the advantage of the largest operations that use their economies of scale to bid up cash rents and land values – to the detriment of midsize and smaller operators. Gains from efficiency from the largest operations are not passed along to consumers, but instead go heavily to acquire additional land. “Thus, federal funds are being used to help the largest operators become even larger,” said Harl. “And there’s little public interest in that.”

Third, Harl said society needs to resolve whether it prefers an agricultural sector of independent entrepreneurs or a sector of serfs. “I believe a sector of independent entrepreneurs is more consistent with a healthy rural America,” he said. “To maintain that model, though, increased attention must be given to mergers, consolidations, contract practices, and other factors that reduce the management role of the producer.”

Harl said that from several perspectives (trade, food safety, food security, Third World economic development, and cross-border environmental problems), the need for a global food and agriculture policy is becoming increasingly clear. Harl added that supporting Third World economic development is clearly in the long-term best interests of the entire world. “Even if one’s interests go no farther than national security, in a world of disharmony, eliminating world hunger by working to boost incomes is a worthy, priority goal,” he concluded. “That’s why we need to be peering ahead from a platform of a global food and agriculture policy in the twenty-first century.”

## Iowa Energy Center

**FLOYD E. BARWIG - Director of the Iowa Energy Center, Ames, Iowa**

Floyd E. Barwig is director of the Iowa Energy Center, Ames, Iowa. The energy center is a research, education, and demonstration organization dedicated to improving Iowa’s economy and environment by advancing energy efficiency and renewable energy use. The center was created by the Iowa General Assembly and is funded by the state’s electric and natural gas ratepayers.

The overarching theme of Barwig’s remarks was that Iowa’s ubiquitous biomass represents a potentially very strong economic opportunity to extract chemicals and fuel from a renewable source. Although other speakers at the conference discussed making fuels (namely ethanol and biodiesel) from corn and soybeans, Barwig explained that fuels are only a small subset of a great many other chemicals that can potentially be derived from biomass. Moreover, he said it is also possible to make these other chemicals from materials now commonly treated as waste, such as: agricultural residues, food processing wastes,

livestock production wastes, municipal solid waste, obsolete seed corn, and wood waste. Significant quantities of these waste materials are abundantly available in Iowa and throughout the Midwest agricultural belt.

Years ago, many chemicals, such as celluloid for film and certain plastics, were made from biomaterials. Oil discovery meant biomaterials were replaced with the then cheaper resource. Today, of course, oil is no longer inexpensive, but there are biomass materials, such as feedstock, available that are much cheaper than petroleum.

In fact, Barwig continued, anything, including many chemicals, that can be made from petroleum or natural gas can also be made from an alternative biological source. Once these chemicals are created, they have a higher market value than the energy inputs needed to create them. According to Barwig, chemicals that are currently made from petroleum are a real market for biomass. Some examples of petrochemicals and their biochemical counterparts are: ethylene and ethanol, propylene and isopropanol, and MTBE and MTBE (from plants). The big question, he noted, is whether these materials can be made cost effectively.

As a world leader in agriculture, Iowa is uniquely positioned to capitalize on the development of chemicals and fuels from biomass. The Iowa Energy Center's Biomass Energy Conversion (BECON) facility in Nevada, Iowa, houses the state's most innovative and collaborative biomass projects. With BECON, the Energy Center has established a platform for researchers and educators to turn promising ideas into functioning commercial-scale conversion units.

The BECON facility converts biomass into numerous valuable chemicals and fuels. This concept is not new. Corn stover (the stalks that remain after the corn has been harvested), ethanol, methanol, vegetable oils, and a host of other biomass-based products have been in use since the 1800s to make products such as paint, glue, adhesives, synthetic cloth, and solvents. At the BECON facility, an entire portfolio of modern day processes and systems used to produce chemicals and fuels from biomass are being studied, all at the pilot plant scale. "This is because we don't think we're smart enough to pick the one and only technology that will work," quipped Barwig. "And also, we believe that the end result will be combinations and permutations of these different technologies."

"A biorefinery should run like a petroleum refinery," he continued, "that is our model." He explained that an oil refinery could make hundreds of different products (ranging from pharmaceuticals to road tar) from its feedstock, which is crude oil. The plant managers consult market prices to determine which products to produce and

then operate the oil refinery accordingly. Biomass must get to the same place, where multiple products are made from biomass feedstocks, to ensure that the biorefinery is hedged and not reliant upon any one single product, Barwig explained.

Fortunately, he continued, Iowa has an abundance of feedstock available. According to agronomists, if one-half of the corn stover was utilized as feedstock for the biomass refineries, Iowa would annually produce 20 to 30 million tons. The other half would be left in the fields to prevent soil erosion. And, the market for biomass-derived chemicals is robust. Barwig estimated that 45 million tons of "big three" organic chemicals (ethylene, propylene, benzene) are used annually in the United States.

**Figure B1: Rural Economic Development Potential of Iowa Economics**

Iowa Gross State Product	\$111 Billion in 2004
Iowa Total Exports Outside US	\$12.9 Billion in 2002
Iowa Ag and Food Exports Outside US	\$4.69 Billion in 2002
24 Million Tons of Corn Stover @ \$0.02/Pound	\$1 billion
24 Million Tons of Corn Stover @ \$1.50/Pound	\$72 billion

Source: Iowa Energy Center

Consequently, the rural economic development potential from biomass is enormous. Figure B1 illustrates the potential impact on Iowa's economy. If biomass is simply sold only as a commodity, revenues would total \$1 billion (24 million tons of corn stover at \$0.02/pound). Under this most basic scenario, Iowa is simply utilized as a "biomass strip mine." However, if new ways to produce chemicals and fuels from biomass can be developed and existing processes are enhanced, the economic impact could potentially be magnified to \$72 billion (24 million tons of corn stover at \$1.50/pound). By adding value to agricultural products through research and development, profitability for farmers and many Iowa industries (not just the biorefinery industry) would be greatly enhanced, Barwig explained. In 2004, Iowa's gross state product was \$111 billion. In 2002, Iowa's international agricultural and food exports totaled \$4.69 billion. Successfully developing full-scale biomass technologies and new products would provide Iowa with value added exports and have a tremendous positive impact on Iowa's economy, he said. Further, using agricultural byproducts, previously classified as waste, reduces environmental degradation and is more environmentally friendly than producing and using petrochemicals. "The potential is very real to have a biochemical industry as an extraordinarily significant part of Iowa's economic future," Barwig concluded.

## Institute for Local Self-Reliance

**DAVID MORRIS, PH.D. - Cofounder and Vice President for the Minneapolis and Washington, D.C.-based Institute for Local Self-Reliance and Director of the New Rules Project<sup>24</sup>**

David Morris, Ph.D. identified three long-term forces that will influence the future of agriculture: WTO rules, increasing international environmental consciousness, and technological change.

First, he said WTO rules are pitting farmers from different countries against one another. He sees this hostility between international farmers increasing as global competition increases, and predicts that the consequence will be a reduction in the direct payments that governments make to their farmers.

The second long-term force is an increasing international environmental consciousness. "By failing to ratify the Kyoto protocol, we in the United States have stepped aside from the development of international standards related to the environment," said Morris. "But that doesn't mean the rest of the world stopped." Because plants absorb carbon dioxide and sequester it, the Kyoto protocol puts great emphasis on agriculture. The Kyoto protocol, which went into effect in February 2005, for the first time in almost 150 years makes a legal distinction between living carbon (e.g., plants) and dead carbon (e.g., fossilized plants or fossil fuels), he explained. The implementation of that protocol will raise the value and importance of agriculture as a vehicle for reducing greenhouse gas emissions. Living organisms can also be used to extract the carbon dioxide from greenhouse gas emitting facilities, like coal fired power plants, and convert the carbon into useable products.

The third long-term force influencing the future of agriculture is technological change. In particular, Morris sees biological science as predominating. "We are learning to manipulate living matter to the point where we can make ever higher quality products, chemicals, and fuels at ever lower cost," Morris said.

"Coming out of these long-term trends, one begins to foresee a carbohydrate economy substituting for a hydrocarbon economy," opined Morris. He sees evidence of this trend in many instances. The carbohydrate gets rewarded and the hydrocarbon gets penalized as the economy begins to rely more on renewable materials. Morris points to Brazil as an example of a functioning carbohydrate economy. "In Brazil, 40 percent of all their transportation fuel comes from ethanol made from their sugar cane. So, ethanol is not an additive – it's becoming Brazil's primary fuel." If the overall economy begins to

move toward a carbohydrate economy, then biofuels and biochemicals begin to substitute for gasoline and petrochemicals. This shift would lead to a doubling or tripling of the amount of plant matter consumed by the economy for all purposes, including food, fuel, feed, clothing, construction materials, and others.

Morris believes the United States is moving in the direction of a carbohydrate economy. This transformation creates an enormous opportunity to promote not only the demand for plant matter, but also to think about what the structure of agriculture will be like. "We are creating the equivalent of a new agricultural system in terms of the processing techniques, the land area utilized, and the crops themselves," he said. A carbohydrate economy is not only desirable from the standpoint of the domestic rural economy and necessary an environmental standpoint, Morris explained, but it also dampens the farmer versus farmer competitive dynamic currently occurring in international agricultural trade. "Because if we create these new markets, then the world's farmers don't compete against one another – rather, they compete against the fossil fuel industry," Morris said.

Despite the enormous possibility of the carbohydrate economy, Morris cautioned that such a future is not inevitable and/or might not happen in the desired manner. The crucial factors are the laws, regulations, and ordinances that channel the entrepreneurial activity surrounding biochemicals and biofuels.<sup>25</sup> "These rules must be implemented in a manner that maximizes the benefits redounding to rural areas," he said. "What Morris wants to avoid is a repeat of the mistakes of the last revolution and simply have the new carbohydrate economy yield only marginal benefits to rural areas, with slightly more jobs and modestly higher values for rural outputs. Through the crafting and implementation of appropriate rules that channel ingenuity, investment capital, and entrepreneurial energy in the direction of creating local ownership structures and technologies, Morris believes that increased and sustainable economic development can be achieved in rural areas.



## Food Production and Marketing in Rural America: Moving from Commodities to Differentiation

**RICHARD PIROG - Program Leader for the Marketing and Food Systems Initiative of the Leopold Center for Sustainable Agriculture, Iowa State University<sup>26</sup>**

Richard Pirog is the project director for the Value Chain Partnerships for a Sustainable Agriculture (VCPSA) project. He also leads the Regional Food Systems Working Group (one of three VCPSA working groups), and serves on the Iowa Food Policy Council.

Pirog's remarks focused on how the businesses involved in the production, processing, and marketing of highly differentiated food products could be a key part of a rural economic development plan. In order to achieve this plan, Pirog believes that agriculture's role in the future of rural America needs to include: a significant increase in highly differentiated food products and businesses; development of place-based foods that are linked to agritourism; and more focused and synchronized funding, research; and development to support these food businesses.

most market research shows that if given a choice, most Americans prefer to purchase food grown as close to home as possible. And they are willing to pay higher prices to get it. "So, there is potential in organics, but it also comes with a big caveat given the current global production system," Pirog said.

### Place-based Foods

One way that farmers may be able to avoid "commoditizing" niche markets for highly differentiated food products is to limit production to certain geographic areas that are best suited, ecologically and/or traditionally, for production, and build brand identity and reputation based on quality, Pirog explained. Theoretically, if farmers control the amount and the quality of the product that enters the market, they can better maintain premiums and lower the risk of "commoditizing" the product.

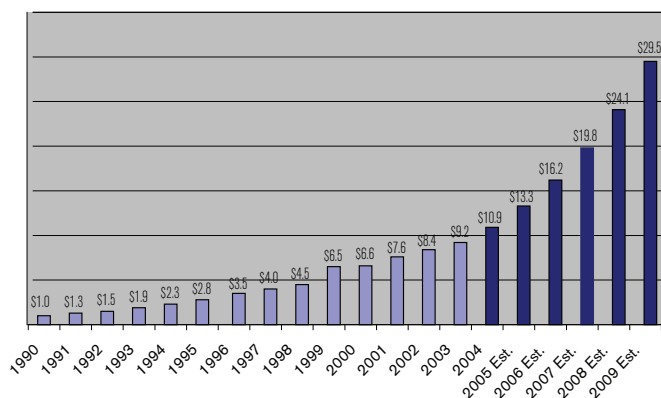
According to Pirog, place-based foods have a unique role to play in rural economic development because of their potential link to agritourism and the "experience economy." "The experience economy is the phenomenon where people no longer just want to go out to eat, he explained. "Rather, they want a unique experience. After these consumers have physically left the area, they may still be able to re-live the experience by accessing the food products that are unique to that area."

Europe has many lessons to offer regarding place-based foods because several of its countries invested resources in developing a system of geographic indications (GIs), which identify a good as originating in a region or locality where its quality, reputation, or other characteristic is essentially attributable to its geographic origin. All other countries must prevent use that misleads the public, creates unfair competition, or suggests a product originates in a geographical area other than the true origin. For example, Pirog offered, a ham and cheese producer in Denmark who marketed its ham and cheese as if it were produced in Italy's famous "food valley" where Prosciutto di Parma ham and Parmigiano-Reggiano originate would be violating GI protections.

Using GIs has advantages, such as maintaining very high quality, limiting supplies, and enabling premium prices. These price premiums reach back through the supply chain to producers. Because the products are less likely to be commoditized, the regional brand identities increase the likelihood that profits stay in the local region.

The United States incorporates protection of GIs within the trademark system. A certification mark is used to certify such characteristics as: origin, material, mode of manufacture, quality, accuracy, or that the labor was performed by members of some organization, such as a union (e.g., "Look for the Union Label"). A certification mark can also be used to designate geographical origin.

**Figure P1: Total U.S. Organic Sales Projected Growth**



Source: Leopold Center for Sustainable Agriculture

### Highly Differentiated Food Products and Businesses

Sales of organic food products in the United States have grown dramatically in recent years, with double-digit growth rates projected to at least 2009 (see Figure P1). Pirog attributed much of this growth to the aging baby boomers who are demanding more healthy food choices. Although the United States is experiencing dynamic growth in organic food sales, there has been little growth in the number of acres devoted to growing organic foods. "If you want to see a really expanding organic industry, go to India and China," pointed out Pirog. "The increase in organic acres in these two countries has been astronomical." He added that the United States is running a significant trade deficit with regard to organic products. However, despite a dearth of a homegrown organic food,

“A great example in the marketplace is the Vidalia onion,” Pirog said. “An onion may only be called a Vidalia if it is grown within 19 counties in Georgia that have a predominant soil type.”

The ultimate goal for place-based foods is to provide new opportunities for rural regions faced with globalizing markets. “If the product is unique to the place, you can’t take it away from the place,” Pirog said. “This is the inherent logic behind development of these products.”

### **Programming to Support Food Businesses**

Pirog argues that the funding and programming for sustainable agriculture and food systems is inadequate. Although there has been good work in systems thinking, it has only been at the farm level and not across the food value chain. This approach is fine for direct markets and selling within a community, but it is not going to have a large impact in many rural areas, which need additional resources to be able to sell across the food value chain (i.e., producers, processors, distributors, and markets). Also, foundations and investors supporting this work need to make funding decisions on a synchronized basis across the food value chain. This approach should be used for highly differentiated and place-based products so that challenges in production, processing, and distribution can be addressed simultaneously, and a more dynamic approach to solving the problem can be taken, Pirog said.

Pirog ended with a challenge for the future. He said that the United States is either in the early and most difficult stages of a long, slow transition to a food system driven by a desire for healthful, safe, high quality foods and knowledge about the sources and production methods of that food. Or, as some skeptics claim, Pirog said the country is playing around with permanent small niche markets that will never grow into something significant enough to support tens of thousands of small- and medium-sized farms. He concluded that it is essential to move beyond assisting the permanent small niche markets to provide more farmers the opportunity to be an essential part of a thriving rural economy.

# Infrastructure in Rural Areas: Telecommunications

**Moderator – Peter L. Stenberg, Ph.D., Senior Economist at the Economic Research Service (ERS), U.S. Department of Agriculture, Washington, D.C.<sup>27 28</sup>**

The Future of Economic Development in Rural America

## Modern Telecommunications in Rural America

Stenberg provided a broad overview of the increasingly significant economic role that the Internet plays in the rural marketplace. “The rural and farm communication and information issues presented by the Internet present the biggest economic challenges to rural America,” stated Stenberg. “The concept of economies-of-scale is the key to understanding the economic challenge.”

According to Stenberg, local exchange carriers (telephone companies) incur higher costs for providing rural households with telecommunication services than they do for urban households. As population density decreases, the price for delivering traditional or wireless phone service increases exponentially because there are fewer people to share in the costs, he explained. In addition, rural telephone service providers must spend more per customer for maintenance and repair than do urban providers. Because equipment manufacturers focus on the needs of more profitable large-scale telecommunication companies, Stenberg continued, small telecommunication companies often face challenges in purchasing equipment scaled for their operations.

The diversity of providers also provides another challenge for rural areas. Most of the more than 1,000 telecommunications service providers are small and concentrated in rural areas, and many are organized as cooperatives. “The spectrum of providers ranges from ‘mom-and-pop’ operations serving as few as 10 households to the Baby Bells with millions of customers,” he said. “Quality of service varies considerably across these providers and even within the service areas of the largest providers.”

## Federal Policy Facilitates Diffusion

“Federal policy has been developed to facilitate the diffusion of new communication and information services, and to address equity issues associated with cost barriers

to providing equivalent telecommunication services to rural areas,” stated Stenberg. “The cornerstone of our current policy is the Telecommunications Act of 1996, which deregulated the communication and information sectors and updated universal service provisions that had led to a near universal availability of a minimum level of service at affordable rates.”

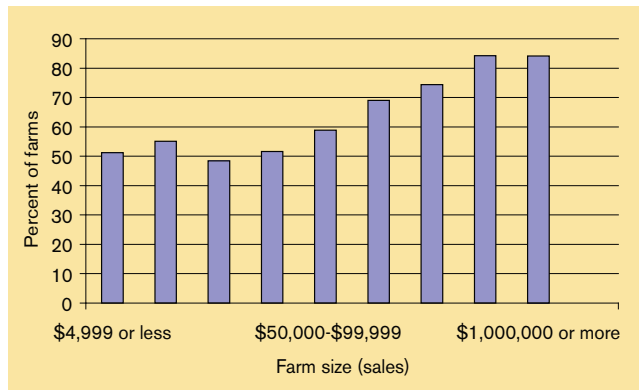
The new universal service provisions build on previous policies that resulted in fairly uniform prices for local telephone service across the country. The uniformity in price, however, does not guarantee uniformity in quality of service, nor does universal service address the cost of toll calls, which can be a significant expense for some rural households.

Stenberg explained that the 1996 universal service provisions also provided \$2.25 billion dollars in new funds annually to help pay for modern communication infrastructure for schools and medical facilities in high-cost (i.e., rural) and low-income communities. The 1996 act also mandated, at some point in the future, a broadening of the definition of telephony to include Internet service provision.

The most recent changes to federal policy are incorporated in the Farm Security and Rural Investment Act of 2002. This legislation focuses on rural development and authorizes \$100 million for grants, loans, and loan guarantees for the purpose of improving access to broadband telecommunication services in rural areas. The funds are earmarked for construction, improvement, and purchase of equipment and facilities for rural broadband service in eligible communities. Further, the definition of “broadband service” would be reviewed regularly to take into account changes in technology.

“In rural areas, farms have been in the vanguard of Internet use in the workplace,” Stenberg said. As illustrated in Figure S1, 56 percent of farms reported having computers with Internet access in 2004. According to Stenberg,

**Figure S1: Farm Internet Access 2004**



Source: Stenberg using the 2004 USDA Agricultural Resource Management Survey

20 percent of those respondents used the Internet to purchase farm-related items and 29 percent used it to purchase household items. Internet use varied somewhat by geographic location of the farm household, with farms in small towns having the lowest share of Internet access. "Differences in Internet use among farm households by farm sales, however, were striking," Stenberg noted. He explained that Internet use ranged from 49 percent for farms with sales of \$10,000 to \$19,999 to 84 percent for the largest farms (gross sales of \$500,000 or more). "The largest farms also had the highest share of individuals using the Internet to make both farm and household purchases, mirroring the pattern of all U.S. households," he said.

### Trends in Rural Communication and Information Services

"Two major developments, wireless and satellite telephony, have often been cited by their promoters as overcoming the economic disadvantages rural areas have in the use of traditional telephone service," stated Stenberg. "However, both technologies still face constraints that keep their costs high relative to the quality of the service they provide." Wireless services have some cost advantages in covering the "last mile" from a phone company's switch to the household, but limitations in the technology and the terrain keep costs high – overcoming dead zones (i.e., areas either too far from a communications tower or where physical barriers impede the signal) in areas with low population density quickly reduces any cost advantages. Although satellites hold some promise in providing broadband Internet service to rural households, the transmission quality has not reached the level of hardwired systems, noted Stenberg. Service speed may never match broadband services obtained through telephone or cable systems because of technical limitations.

The marked decline in investment in telecommunications at the time of the dot-com bust did initially slow the diffusion of Internet and other new services, but the demand for these services has continued to grow. Stenberg summed up his remarks by stating that the

availability of new services and their affordability will be determined by three main mechanisms: governmental policy, market incentives, and the economic feasibility and technical limits of new technologies.

### Mahaska Communications Group – Starting from Scratch

**JOE P. CROOKHAM - President and Principal Owner of Musco Corporation and Mahaska Communications Group (MCG), Oskaloosa, Iowa<sup>29</sup>**

Musco Corporation's primary business is athletic field lighting for community parks, recreation facilities, and schools. Because he was dissatisfied with the telecommunications services provided by his local provider, Crookham established MCG to meet the telecommunication needs of Musco. Crookham discussed how he started and built a rural telecommunications company from scratch and the implications that bringing reliable and high quality communications services has for the economic development and future viability of his rural community.

The lack of locally available sophisticated telecommunications services constrained Musco's operation and growth. Crookham started MCG only after pursuing every other option aimed at not getting into the telecommunications business. "Musco Corporation operates seven international offices, and communications is absolutely critical to us," explained Crookham. "And so when we started running into telecommunications problems; we started looking around for how to solve it. We discovered that, since we were dealing with things that are on the leading edge, our best solution wound up being doing it for ourselves." Crookham noted that MCG was started without any government programs or grants. "We got a conventional bank loan and went into business," he said.

As MCG began to build its communications network, it soon discovered that its own employees had similar needs – only at home. Further, the employees were reflective of the entire local community. "So we looked at what it would cost to build a complete 'fiber to the home/fiber to the world' system. It's about a \$12 million investment for a town of 11,000 people," he said. "We determined what our investment break even point was and then jumped in to build the network." Construction started in July 2003 and was completed in October 2005.

"Modern communications networks are no longer about sending electronic pulses over copper wire," explained Crookham. "They're now about sending eight-bit packets of information over glass (transparent glass fibers transmitting light)." He compared a modern fiber optic network to a parcel shipping company – an envelope with

the proper label can contain just about anything and be shipped anywhere in the world. Similarly, anything, such as pictures, movies, voice, and data, that can be broken down into eight-bit digital packets, can be sent via the Internet to anywhere in the world. "How big are the things that can be disassembled and put back together?" asked Crookham. "We're just beginning to find out."

"The issue for everyone who wants to use the Internet and be successful in competing in the future is *network capacity*," Crookham emphasized. Crookham stated that robust Internet network capacity facilitates commerce in the same way that the interstate highway system does. However, where the interstate highway system moves physical goods, the Internet moves information. "The key is to have a robust communication network – i.e., a big pipe – because people are going to find bigger and bigger ways to make things happen that confer competitive and economic advantages, and if you don't have the ability to ship information through the network you will not stay competitive."

### **Wisconsin State Telecommunications Association – Providing Rural Service**

**BILL ESBECK - Executive Director of the Wisconsin State Telecommunications Association<sup>30</sup>**

Bill Esbeck provided a broad overview of current telecommunications technology and its application in Wisconsin's rural areas and a glimpse of what the very near future will hold for telecommunication consumers.

Esbeck began with a brief overview of the technology applicable to rural telecommunications. He explained that broadband Internet access, or "broadband," is a high data-transmission rate Internet connection. Current broadband speeds are about five times faster than traditional dial-up connections. The four existing technologies that are capable of delivering broadband are: digital subscriber line (DSL), Wi-Fi (wireless), satellite, and cable modem (which includes both fiber optics and copper wires). Esbeck then discussed the current state of telecommunications in rural Wisconsin including such areas as: investment and broadband availability, compression technology, increasing bandwidth, and products and services.

Esbeck said approximately 90 percent of telephone exchanges in Wisconsin have broadband capabilities, and 85 percent of all residents can order broadband products from their telephone companies. "More than 15,000 sheath miles of fiber optic cable and more than 1 million strand miles of fiber optic cable have been buried in Wisconsin," stated Esbeck. "This allows us to get to 85 percent penetration of broadband to all residents." He cited a recent study by the University of Wisconsin-Stout concluding that the nine counties in northwestern

Wisconsin (a very rural area) have 100 percent broadband availability.

Advances in technology over the past 15 years have focused on the ability to compress data and deliver it over great distances. To illustrate the advances, Esbeck described how BadgerNet, Wisconsin's video distance learning network, has steadily improved its compression technology. In 1991, BadgerNet was capable of delivering only a single 1x1 video signal using a 45 Megabits per second (Mbps) "pipe," which was the best available technology. In 1997, BadgerNet was able to triple the product it was delivering through the same "pipe" by migrating to a 1x3 video signal. By 2005, BadgerNet was still delivering three video streams; however, instead of using a DS3 (45Mbps) "pipe," it can deliver the same video channels (1x3) and the same video quality with only 4 Mbps. "Imagine," Esbeck offered as an analogy, "that you had a bus load of people. In 1991 you would have needed a 45-lane highway to drive that bus anywhere. In 1997, the bus became a triple-decker and carried three times the number of passengers driving down the 45-lane highway. In 2005, you still have a triple-decker bus, but now you only need a 4-lane highway. This is more than a 30-fold increase in carrying capacity over the past 15 years."

Esbeck concluded by stating that products and services in rural Wisconsin include competitive broadband options with increasingly higher bandwidth (ADSL 2 Plus). Digital video is available from about 12 rural telephone companies, and IP voice (voice over the Internet protocol) is just beginning to emerge, allowing for the movement toward "total convergence." "As we look to communications, what we are going to see in the very near future is the total convergence of voice, video, and data applications – any product or service – on any device at anytime, anywhere," envisioned Esbeck, who quoted well known industry sources. "This isn't like the 'flying car' or 'paperless office' predictions we were all promised a while back. Rather, these are very real, very user-friendly applications that are going to increase productivity and make the entire communications process much more enjoyable – all in a very cost-effective manner."

### **Michigan Broadband Development Authority – Attracting Internet Investment to Underserved Communities**

**ROBERT L. FILKA - Chief Operating Officer for the Michigan Broadband Development Authority (MBDA)<sup>31</sup>**

Robert Filka was also a member of the executive leadership team for the Michigan Economic Development Corporation (MEDC), where he authored the LinkMichigan telecommunications infrastructure report and developed the MEDC's benchmarking analysis to gauge the state's economic competitiveness.<sup>32</sup>

"In 2002, the goal used to be to get broadband access out to everywhere we could and have it be affordable," Filka said. "Today, when you're talking about world class communities, you're really talking about a community that has multiple residential types of services available: cable, DSL, fiber access for higher bandwidth commercial applications, and mobile wireless access." Filka stated that global business leaders want these types of broadband access options when they are looking to conduct business in various towns. He pointed out that although many businesses can afford to bring state-of-the-art access to their own corporate headquarters, they want to locate in areas where the workforce also has 24/7 broadband access at home. According to Filka, the United States ranks only 14th best in the world in terms of use and availability of broadband.

The MBDA was formed as a result of the findings of a state economic development benchmarking analysis conducted in 2002, which found that access to high-speed telecommunication services is the most important state infrastructure issue for the new century.<sup>33</sup> The MBDA's mission is to attract high-speed Internet investment to underserved communities, and encourage competition and more affordable broadband services across the state. Using a \$50 million bond sale and limited CDBG dollars, the MBDA makes loans and grants to broadband providers.

### **MBDA Financing**

"We operate much like a bank in terms of lending criteria," described Filka. "However, unlike a banker, the MBDA is really a banker, venture capitalist, and economic developer all rolled into one to try to bring service to different parts of the state." The MBDA charter permits lending to a range of organizations: telecommunications companies, private businesses, nonprofits, and government entities. The MBDA can finance a broad range of projects such as network expansion (fiber, DSL, cable, wireless), hardware, software, training, and installation. The MBDA will consider loan requests up to \$100 million.

When evaluating loan requests, the MBDA asks three primary questions:

1. Does the proposed use of funds serve the public interest?
2. Is the project technically and financially feasible?
3. Are the applicants a reasonable credit risk?

Key lending criteria includes adequate cash flow, a solid business plan, sufficient borrower equity, and guarantees.

Typical loan terms and conditions are:

- **Maturities** – ranging from five to seven years and 12- to 24-month interest-only draw periods if necessary

- **Interest Rate** – 8 percent fixed rate

- **Equity** – 100 percent project financing available, but net equity on company balance-sheet should equal 20 percent (at a minimum) of loan request

- **Guarantees** – typically required, but usually not collateralized; operating deficit reserves and other alternatives to personal guarantees utilized on occasion

### **Low Interest Loans to Expand Services to Underserved Areas**

The MBDA has a charge to expand affordable broadband access throughout Michigan by 2007. To accomplish this, the MBDA aggressively seeks financing applications to expand their services into the state's most rural and underserved regions. In eligible regions, qualifying broadband providers may receive loans with 4 percent interest and interest-only draw periods of up to 24 months. Providers will work with local government and economic development organizations to qualify their proposals. "Michigan is encouraging regional leaders to creatively utilize this solicitation to attract more broadband investment into their regions," stated Filka. "Schools, government offices, and other large users of high-speed Internet services in underserved regions are being encouraged to leverage community-wide access by serving as anchor tenants for providers willing to expand services throughout their area. It is hoped these entities will partner with providers to lower the cost of such infrastructure, by providing access to towers and other structures to support community-wide deployment."

# New Initiatives of the State of Iowa - Great Places

## Anita Walker - Director of the Iowa Department of Cultural Affairs

### The Future of Economic Development in Rural America

Anita Walker also serves as executive director of the Iowa Arts Council, administrator of the state historical society, and state historic preservation officer. Walker was a leader in the development of a statewide cultural vision for Iowa called Imagine Iowa 2010, which launched a number of innovative community-based projects.

Walker noted that Governor Vilsack launched the Iowa Great Places (IGP) concept in January 2006 to help transform Iowa's economy.<sup>34</sup> "The governor made two challenges," explained Walker. "First, he challenged Iowans across the state to think about the place where they live and to be bold and creative in capitalizing on what is genuine, authentic, and special about that place. Second, he challenged state government agencies to do a better job of working together." The IGP is designed to bring together the resources of state government to build capacity in communities, regions, neighborhoods and districts to cultivate the unique and authentic qualities of the areas.

"The first thing we did to get started," said Walker, "was identify what makes a great place." Her team found that it's not just one particular attribute; rather, "greatness" is achieved when several key factors combine simultaneously. She identified the following seven key dimensions of a great place:

- **A Unique Sense of Place** – This is an identity that makes a place feel special, such as its history, ethnic background, or natural resources.
- **Engaging Experiences** – The experiences that people have when in a great place are what they remember when they leave and what connects the person with the place.
- **A Rich Social Fabric** – Great places are places where everyone feels welcome and there is an opportunity for all people to interact.

- **A Vital Economy** – Residents must be able to make a living in a great place. It's not just about finding jobs, but providing an environment that nurtures both entrepreneurship and opportunities for advancement.

- **A Pleasing Environment** – People like places that are clean, attractive, and beautiful. If a place is well maintained, it shows that people care about it.

- **A Strong Foundation** – A great place needs to have the basic infrastructure; i.e., good roads, sewers, water, telecommunications, education, and healthcare.

- **A Creative Culture** – A great place needs to be open to new and creative ideas.

"This program redefines the way government does business with the people of Iowa," Walker said. "Rather than asking communities and local leaders to make their plans fit state programs, we have identified the programs and resources that can be used to make their dreams and visions come true. Rather than building a community's dream piece by piece, we are synchronizing and streamlining programs, working in collaboration with local leaders, and combining resources for high impact and results."

The Great Places Citizen Advisory Board chose three cities for the pilot project: Clinton, Coon Rapids, and Sioux City. These cities were not selected because they were the best great places, but because they were identified as three different examples or "test tubes" for state agencies to determine if there was a new way to collectively deliver services in a focused way. "Can we in state government – in different state agencies – have more impact and results working in concert rather than working separately?" asked Walker. "This is what we need to find out." The board also looked at each community's level of readiness to move forward with implementing its vision.

The plans call for: improving infrastructure; transforming worn areas of the towns into community centers; renovating and creating dining, entertainment, and recreational areas; and developing programs that highlight special geographical and architectural features of the cities.

Walker stated that IGP program encourages economic development by encouraging more creative and holistic planning. State government and lowans work together to synchronize and streamline programs to fit into a vision, not to make the vision fit state programs, she said. Having locals who can leverage the resources of the state, she said, is the most important asset needed when developing the IGP concept.

## Conclusion

Conference participants generally concluded that the future of economic development in rural America will prove to be a major challenge but holds much promise. As Midwest agriculture and rural development face diverging population trends amid new technologies, the future economic health of rural areas and their community banks will find strength through building on the agricultural tradition of entrepreneurship and promoting business formation. The quality of infrastructure in rural areas will hold the key. There is much potential for a biochemical industry to play a significant part of rural America's economic future and it is becoming clear that increasing emphasis should be placed on a global food and agriculture policy. Government can play a constructive and nurturing role by providing an environment that is conducive to long-term economic growth; however, rules must be implemented in a manner that maximizes the benefits redounding to rural areas.

The Chicago Fed will continue to organize and participate in forums that support and enhance the economic development of rural areas. Please visit the conference website at [www.chicagofed.org/news\\_and\\_conferences/news/index.cfm](http://www.chicagofed.org/news_and_conferences/news/index.cfm) to download conference presentations and view upcoming information about future conferences.

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## Notes

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- 1 The Federal Reserve Bank of Chicago is the headquarters for the Federal Reserve System's Seventh District, which is comprised of Iowa and most of Illinois, Indiana, Michigan, and Wisconsin. For more information, see Frequently Asked Questions – Federal Reserve Banks, available at [www.federalreserve.gov/generalinfo/faq/faqfrbanks.htm](http://www.federalreserve.gov/generalinfo/faq/faqfrbanks.htm).
- 2 USDA term that considers population density and other factors.
- 3 To identify metropolitan counties, we used the U.S. Department of Agriculture's Rural-Urban Continuum Codes, a typology developed in the 1970s and updated after each decennial census. The most recent version of the codes was released in August 2003.
- 4 Jeffrey Walser and John Anderlik, *supra* note 1, available at [www.fdic.gov/bank/analytical/banking/2005jan/art2table9.html](http://www.fdic.gov/bank/analytical/banking/2005jan/art2table9.html).
- 5 All balance sheet growth rates were merger adjusted.
- 6 The FDIC defines farm banks as institutions where at least 25 percent of total loans are made for production agriculture or are secured by farm real estate.
- 7 While the region's primary crops are heavily subsidized, cattle, another important product in the Great Plains, are not.
- 8 Jeffrey Walser and John Anderlik, *supra* note 1, citing Drabenstott, Henry and Gibson (1987), 51.
- 9 Visit the Web site of Wisconsin's Top Rural Development Initiatives program at [www.wirural.org](http://www.wirural.org).
- 10 The Main Street Economist, Commentary on the Rural Economy, Wildlife Recreation: Rural America's Newest Billion Dollar Industry, Jason Henderson, Center for the Study of Rural America, Federal Reserve Bank of Kansas City, April 2004, available at [www.kc.frb.org/RuralCenter/mainstreet/MSE\\_0404.pdf](http://www.kc.frb.org/RuralCenter/mainstreet/MSE_0404.pdf).
- 11 *Id* at 1.
- 12 Visit Wisconsin's Top Rural Development Initiatives regarding wildlife recreation at [www.wisconsinbirds.org/trail](http://www.wisconsinbirds.org/trail) (Great Wisconsin Birding & Nature Trail site) and [www.waupacacountyparks.com/parks/park.cfm?id=28](http://www.waupacacountyparks.com/parks/park.cfm?id=28) (Wolf River Sturgeon Trail site).
- 13 For more information on the annual Bald Eagle Watch, visit [www.saukprairie.com](http://www.saukprairie.com).
- 14 Visit the Potosi Brewery Restoration Web site at [www.potosibrewery.com](http://www.potosibrewery.com).
- 15 Visit Wisconsin's Top Rural Development Initiatives regarding the creative economy at [www.nicksgrandview.org](http://www.nicksgrandview.org) (Grandview Folk Art site) and [http://www.uwplatt.edu/cont\\_ed/artsbuild](http://www.uwplatt.edu/cont_ed/artsbuild) (ArtsBuild – SmART Communities site).



- 16 Per Andrew Anderson, the figures are as of January 2005 and based on reports provided by award recipients. Figures do not include all 13 Vision Iowa projects.
- 17 To learn more, visit [www.extension.iastate.edu/ag/fscrops/crops7.html](http://www.extension.iastate.edu/ag/fscrops/crops7.html). White also recommended the Iowa State University Viticulture home page as the best source for information about Iowa wine and grape production, at <http://viticulture.hort.iastate.edu>.
- 18 Iowa: Viticulture (grapes) 101, Michael L. White, Dec. 2, 2004, Integrated Crop Management Conference, available at <http://viticulture.hort.iastate.edu/info/pdf/icmgrapes101.pdf>.
- 19 Visit the Iowa Wine Growers Association at [www.iowawinegrowers.org](http://www.iowawinegrowers.org).
- 20 The Web site for The Economic Development Group, Ltd. is at [www.tomjacobgroup.com](http://www.tomjacobgroup.com).
- 21 Building a Brighter Future for Rural Illinois: Goals for Stronger Communities, Illinois Rural Partners, Springfield, Ill., 1998, available at [www.communitydevelopment.uiuc.edu/PDFs/strategicplan.pdf](http://www.communitydevelopment.uiuc.edu/PDFs/strategicplan.pdf).
- 22 The Illinois Enterprise Zone Program was signed into law December 7, 1982 (20 ILCS 655/1) (from Ch. 67 1/2, par. 601) Sec. 1. There have been 95 enterprise zones established by the Illinois Legislature and approved by the governor's office for specific areas.
- 23 The Web site for Rural Sourcing, Inc. is at [www.ruralsource.com](http://www.ruralsource.com).
- 24 The Web site for The Institute for Local Self-Reliance (ILSR) is at [www.ilsr.org/index.html](http://www.ilsr.org/index.html).
- 25 The Web site for the ILSR New Rules Project is at [www.newrules.org](http://www.newrules.org). The project proposes a set of new rules that builds community by supporting humanly scaled politics and economics.
- 26 The Leopold Center is a research and education center with statewide programs to develop sustainable agricultural practices that are both profitable and conserve natural resources. The Web site is at [www.leopold.iastate.edu/index.htm](http://www.leopold.iastate.edu/index.htm).
- 27 The Web site for the Economic Research Service, U.S. Department of Agriculture, is at [www.ers.usda.gov](http://www.ers.usda.gov).
- 28 To read more of Stenberg's research, see Peter L. Stenberg, Communications & the Internet in Rural America, Economic Research Service/USDA, Agricultural Outlook, June-July 2002, available at [www.ers.usda.gov/publications/agoutlook/JuneJuly2002/ao292h.pdf](http://www.ers.usda.gov/publications/agoutlook/JuneJuly2002/ao292h.pdf). Also see other articles and information at the rural telecommunications briefing room on the ERS Web site at [www.ers.usda.gov/Briefing/telecom](http://www.ers.usda.gov/Briefing/telecom).
- 29 The Web site of the Mahaska Communication Group is at [www.mahaska.org](http://www.mahaska.org).
- 30 The Web site of the Wisconsin State Telecommunications Association is at [www.wsta.info](http://www.wsta.info).
- 31 The Web site of the Michigan Broadband Development Authority is at [www.michigan.gov/cis/0,1607,7-154-28077\\_28233--,00.html](http://www.michigan.gov/cis/0,1607,7-154-28077_28233--,00.html).
- 32 The LinkMichigan telecommunications infrastructure report is located at [www.michigan.org/medc/news/reports/economic/combo.asp?ContentID=94595AF5-BAE2-4BEE-856A-22DA8A130538](http://www.michigan.org/medc/news/reports/economic/combo.asp?ContentID=94595AF5-BAE2-4BEE-856A-22DA8A130538).
- 33 Id at 5 (Executive Summary).
- 34 The Web site of the Great Places program is at [www.culturalaffairs.org/greatplaces/index.htm](http://www.culturalaffairs.org/greatplaces/index.htm).

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Steven W. Kuehl summarized the conference sessions.

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**Steven W. Kuehl** is the consumer regulations director for the Consumer and Community Affairs division of the Federal Reserve Bank of Chicago. In his role, Mr. Kuehl provides technical assistance on consumer regulations and the Community Reinvestment Act (CRA) to financial institutions throughout the Seventh Federal Reserve District, and writes on various regulatory and economic development topics. He is a commissioned bank examiner and has conducted examinations for both the Federal Reserve and previously with the Office of Thrift Supervision. Mr. Kuehl holds a B.S. degree in finance and economics from Carroll College, and a Juris Doctor degree from Chicago-Kent College of Law. He is licensed to practice law in Illinois, is a member of the American, Illinois, and Chicago Bar Associations, and serves on the American Bar Association Affordable Housing and Community Development Law Forum, and the Chicago Bar Association Consumer Practice Committee.

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