

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

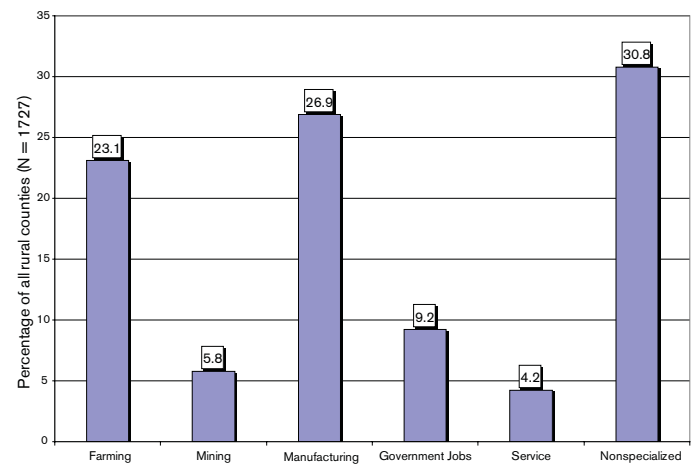
This panel brought together an expert group of speakers who have success stories of developing innovative approaches to promoting economic development in rural areas. Thomas W. Farmer, was the moderator.

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

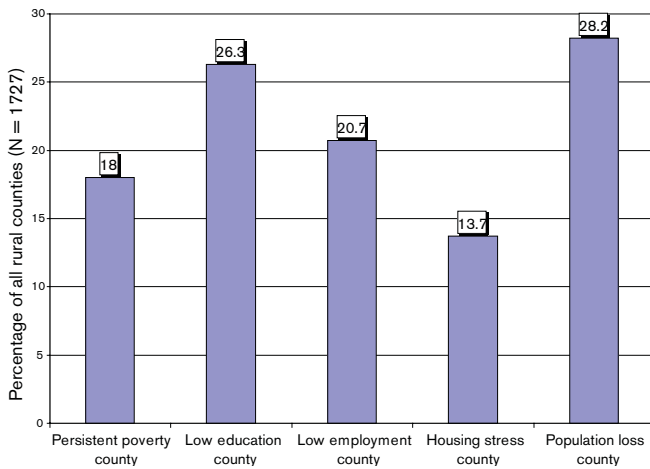


Source: National Research Center on Rural Education Support, U.S. Census Bureau and Economic Research Service, USDA

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

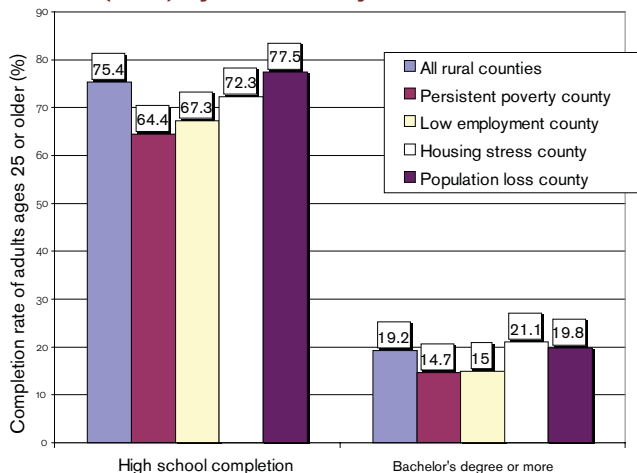
Figure F2: Rural Counties by Key Sociodemographic and Economic Indicators



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 ²⁰

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.²¹

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.

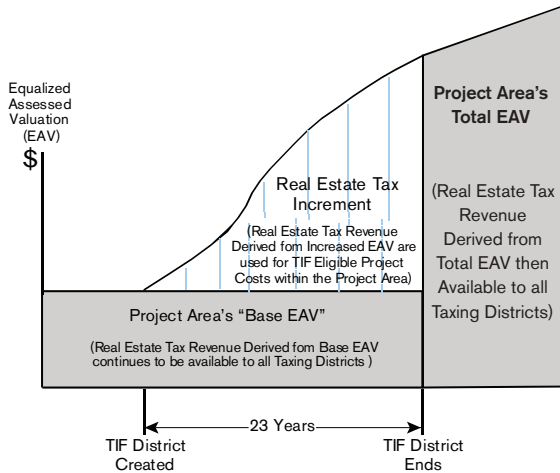
He also discussed three primary Illinois economic development tools:

- **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.²² 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."

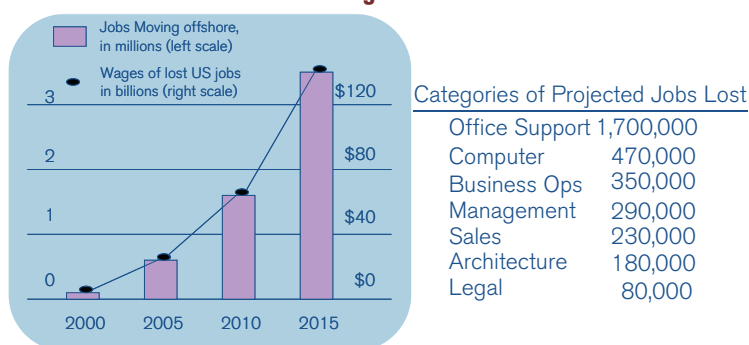
Outsourcing to Rural America

KEN YORGENSEN - Senior Vice President of Technology at Rural Sourcing, Inc (RSI), Durham, North Carolina²³

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.