

## Farming in the Urban Shadow: Supporting Agriculture at the Rural-Urban Interface

By Douglas Jackson-Smith and Jeff Sharp

### In Brief...

#### The Situation:

- In response to nonfarm population growth pressures at the rural-urban interface (RUI), many communities have adopted policies to help preserve farmland. While useful in protecting open space, without parallel efforts to promote the viability of commercial agriculture, the future of agricultural production might still be in doubt.
- Agriculture at the RUI accounts for a substantial proportion of U.S. agricultural production. In 2002, 55 percent of all farm sales in the United States were from farms located at the rural-urban interface (RUI). The lions' share of this production was from a subset of "agriculturally important" RUI counties.
- While agriculture is declining in some RUI counties, agriculture is holding its own and growing and adapting to the challenges and opportunities presented by proximity to urban populations in many counties.
- Opportunities may exist to enhance RUI agricultural viability through closer examination of policy at all levels of government, including the effectiveness of federal commodity programs to support RUI agriculture, and assessment of the existence and impact of state and local land-use and development policies on agricultural viability.

#### Policy Options:

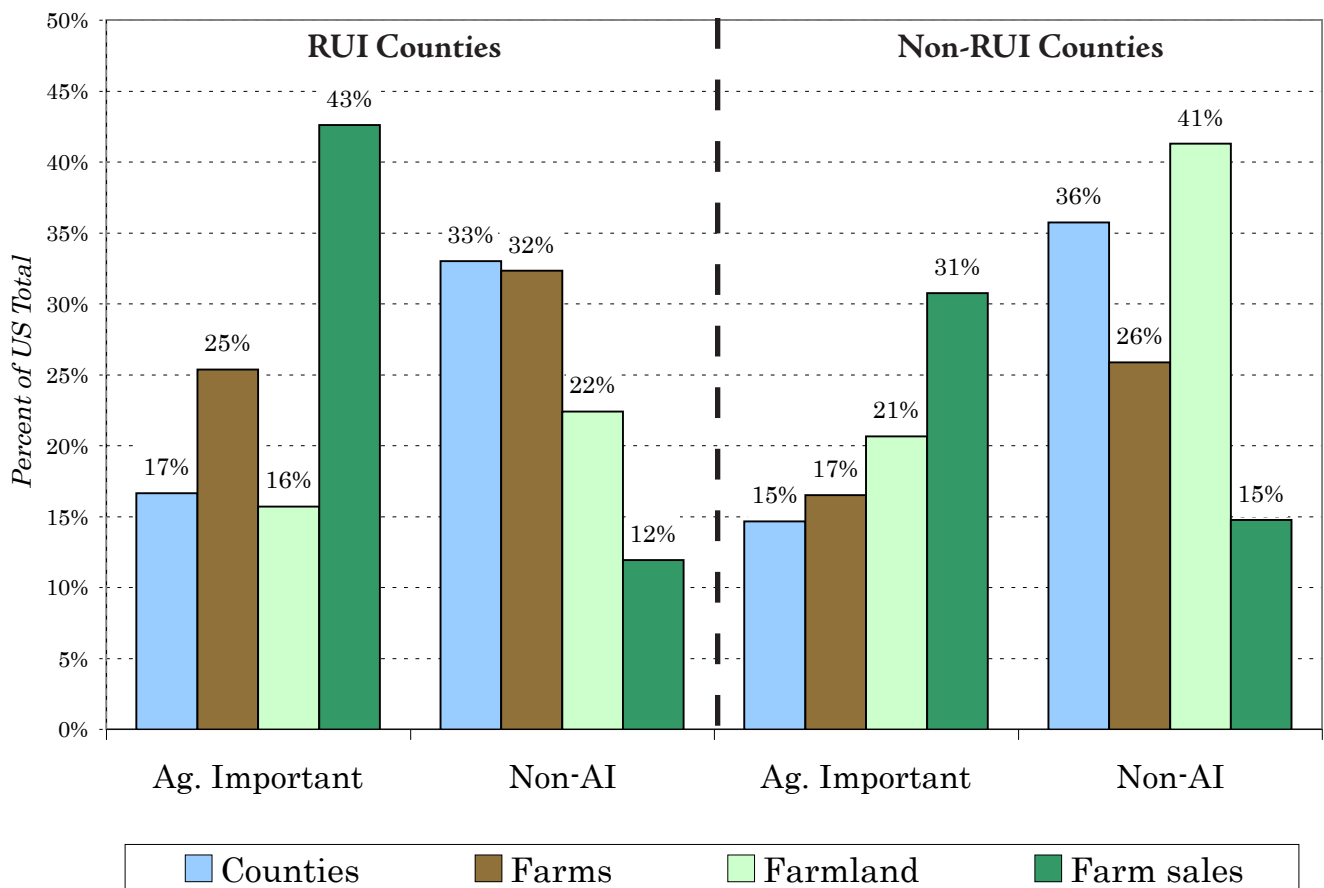
- Few major federal policies or programs have been targeted at commercially important agricultural operations in urban or urbanizing areas.
- Agricultural viability at the RUI may be enhanced by programs and policies that reduce transaction costs and risk, and tap new marketing opportunities.
- The focus of local economic development efforts should expand beyond industrial recruitment by exploring the development of local agriculture – even in relatively urban environments. This includes supporting the entrepreneurial efforts of farm or farm-related enterprises (such as development of a local quality label or value-added processing).
- Currently, many urban land-use policies stress land preservation over maintaining working farms. To both preserve land and the business of farming, these policies should be linked to local, state and federal programs that contribute to the viability of local commercial farms and agribusinesses.
- To assure agriculture's viability in the long-term, a fundamental need may be to better connect and articulate the merits of a vibrant agriculture to local communities.

## Introduction

Popular discussions of agriculture in the United States frequently fall victim to two common misconceptions. First, it is widely believed that agriculture is largely a rural industry and is mainly influenced by rural social and economic trends. Second, the process of urbanization is generally viewed as incompatible with a viable commercial agricultural sector. Competition for scarce land resources, high land prices, conflicts with non-farming neighbors, and opportunities for farmers to “cash out” by selling their land for nonfarm development are perceived as chief factors contributing to agriculture’s demise.

These two misconceptions contribute to policies that are poorly designed to address the challenges and opportunities faced by farmers in urbanizing areas. For example, traditional federal farm programs support commodities that are more common in rural areas (especially row crops) rather than higher-value specialty crops, nursery/greenhouse operations, or enterprises that sell directly to individuals or restaurants in urban markets. In addition, local governments in urbanizing areas have generally focused their efforts on land use and farmland preservation programs that protect open space, while neglecting efforts to protect the social and economic viability of farm businesses.

**Figure 1: Agricultural Importance of Rural-Urban Interface (RUI) and Other Rural Counties, 2002.**



Source: 2002 U.S. Census of Agriculture.

This brief provides an overview of agriculture in urbanizing parts of the United States. We refer to these areas as the “rural-urban interface” (RUI<sup>1</sup>) given that they include both urban and rural land. We describe some of the broad trends and developments in commercial farming in these areas, and show how commercial farming is still quite vibrant and dynamic in many RUI counties. Our research suggests that innovative local, state, and national policies can have an important influence on the future of RUI agriculture.

## Agriculture at the RUI

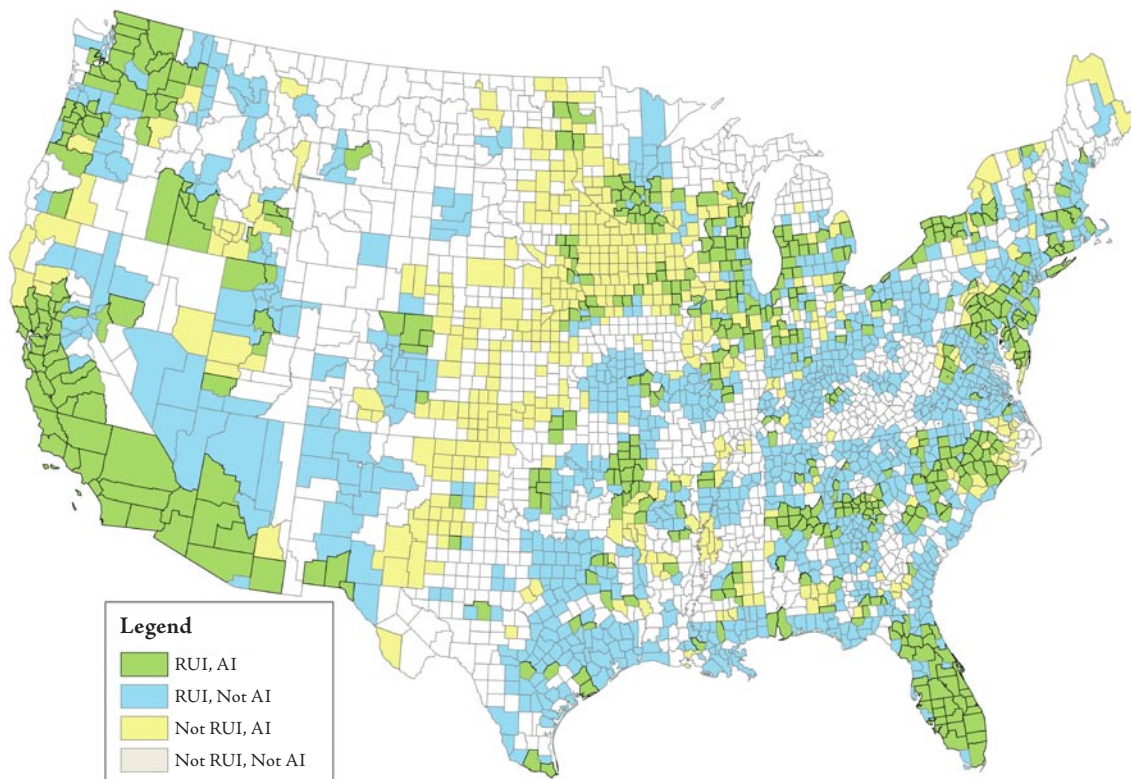
Although agriculture accounts for only a small proportion of the total economic activity in most urban regions, it is by no means a marginal contributor to overall U.S. agricultural production. Figure 1 shows the contributions of RUI and non-RUI

counties to U.S. agriculture. In 2002, 55 percent of all farm sales were from farms located in counties at the rural-urban interface, even though 60 percent of all farmland is located outside RUI counties.

Further, a subset of roughly 40 percent of all RUI counties account for the bulk of the RUI’s contributions to total U.S. agricultural production. We refer to these counties as agriculturally important (AI<sup>2</sup>) because they are in the top 25 percent of farm sales among all counties in the United States. Because of their significant contributions to regional and national food production, and a long legacy of successful agricultural activity, we believe that policy efforts to support agricultural viability at the RUI should focus on these AI counties.

Figure 2 illustrates the geographic distribution of RUI and AI counties across the United States.

**Figure 2: Distribution of Agriculturally Important Counties at the Rural-Urban Interface**



The green and yellow counties represent the 32 percent of U.S. counties that are agriculturally important, whether RUI or not. Such AI counties are clustered in the Upper Midwest, Great Plains, West coast, Florida, and pockets of the Mid-Atlantic and Northeast regions.

## Diverse Agricultural Trends in RUI/AI counties

Census data reveal several distinct trends in America's urban and agriculturally important counties. In some areas, local farming systems are in decline and the countryside is becoming more rural residential than agricultural. In other areas, agriculture persists (or is even growing) in terms of agricultural sales or number of farms.

While this is driven in part by the persistence and growth of continuing traditional operations, it also reflects the entrepreneurial activities of farmers taking advantage of new urban-oriented food markets and growing demand for higher value specialty crops and nursery/greenhouse products.

To make sense of this diversity, we categorize the RUI/AI counties on the basis of trends in farm numbers, farmland acres, and farm sales between 1987 and 1997 (see inset)<sup>3</sup>.

Figure 3 shows the distribution of AI counties into the five classes by RUI status. Overall, the results paint a picture of a vibrant and dynamic agricultural sector in the rural-urban interface. In particular, fewer than 30 percent of the AI/RUI counties experienced decline or deintensification between 1987 and 1997. At the same time, RUI (and AI) counties were noticeably more likely to be experiencing a process of intensification or growth than their non-RUI (or non-AI) counterparts.

## Leading Commodities: RUI versus non-RUI

Figure 3 illustrates how substantial agricultural production is occurring at the RUI, and trends in the farm sector in most AI counties (both at the RUI and outside the RUI) are either stable, intensifying, or growing.

To a considerable extent, the viability of agriculture in these urban contexts has occurred without much support from traditional federal farm policies. This is largely a reflection of the commodities—particularly vegetables, fruits, nuts, and nurseries and greenhouse sales—that

## RUI/AI Categories

**Type 1: Declining counties** are places where farm sales decreased by more than 10 percent, and farmland and/or farm numbers declined by more than 10 percent.

**Type 2: Deintensifying counties** are places where sales are rapidly declining, but land and farm numbers are relatively constant.

**Type 3: Stable counties** are places where sales, farmland and farm numbers all changed less than 10 percent.

**Type 4: Intensifying counties** are places where sales are rapidly increasing, but land and farm numbers are relatively stable.

**Type 5: Growing counties** are places where farm sales grew by at least 10 percent and farm numbers and/or farmland also increased by more than 10 percent.

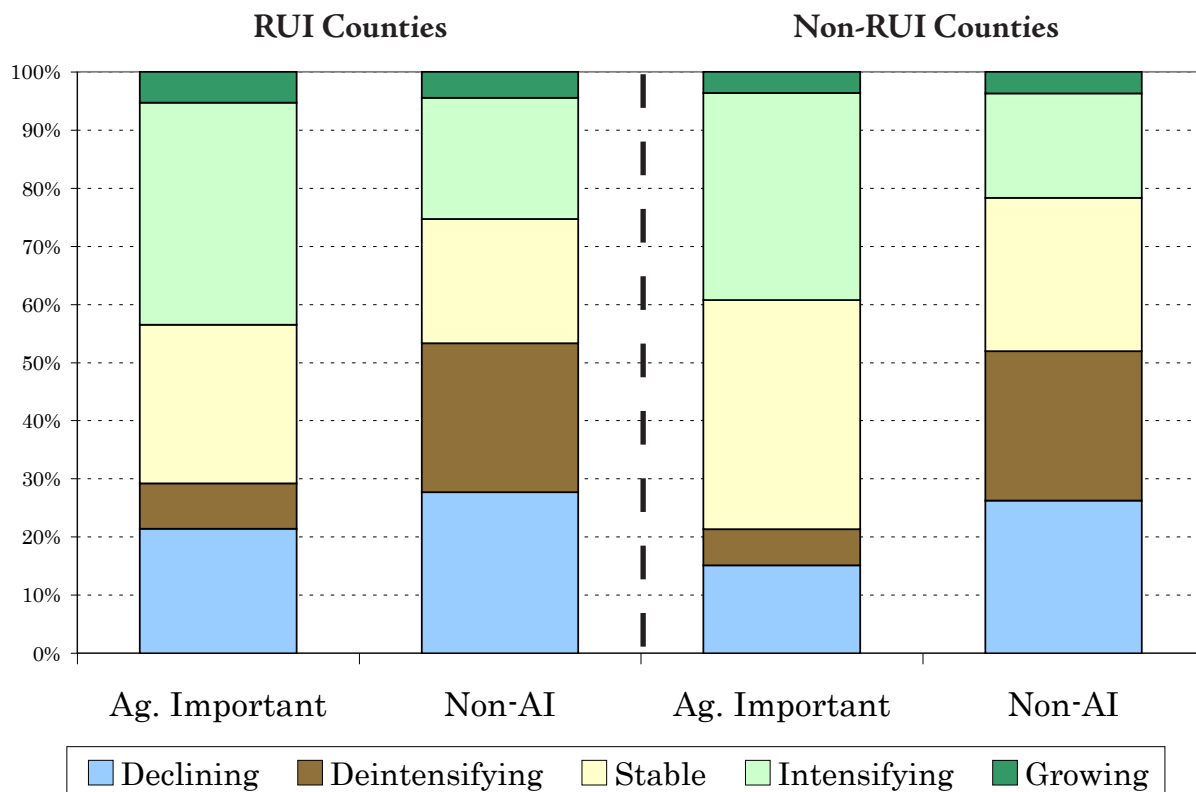
are more common in RUI counties (see Table 1)<sup>4</sup>. Interestingly, given their higher population densities, the subset of RUI/AI counties also has an unusually high share of large-scale poultry production. Taken as a whole, RUI/AI counties generate almost three times the national average of sales per acre of cropland. The commodities that are more likely to be produced in the less urban counties include lower-value crops (such as cash grains) and extensive livestock production (including much of the beef cattle business).

In addition to these core commodities, RUI areas sport emerging sectors poised for future growth, including organic products or from direct sales

to consumers, such as farmer’s markets, roadside stands, or sales to local restaurants and stores. More than three-fourths of organic and direct sales originate from RUI counties. As these market segments expand, it is likely that a sizeable share of entrepreneurial activity will occur in RUI counties

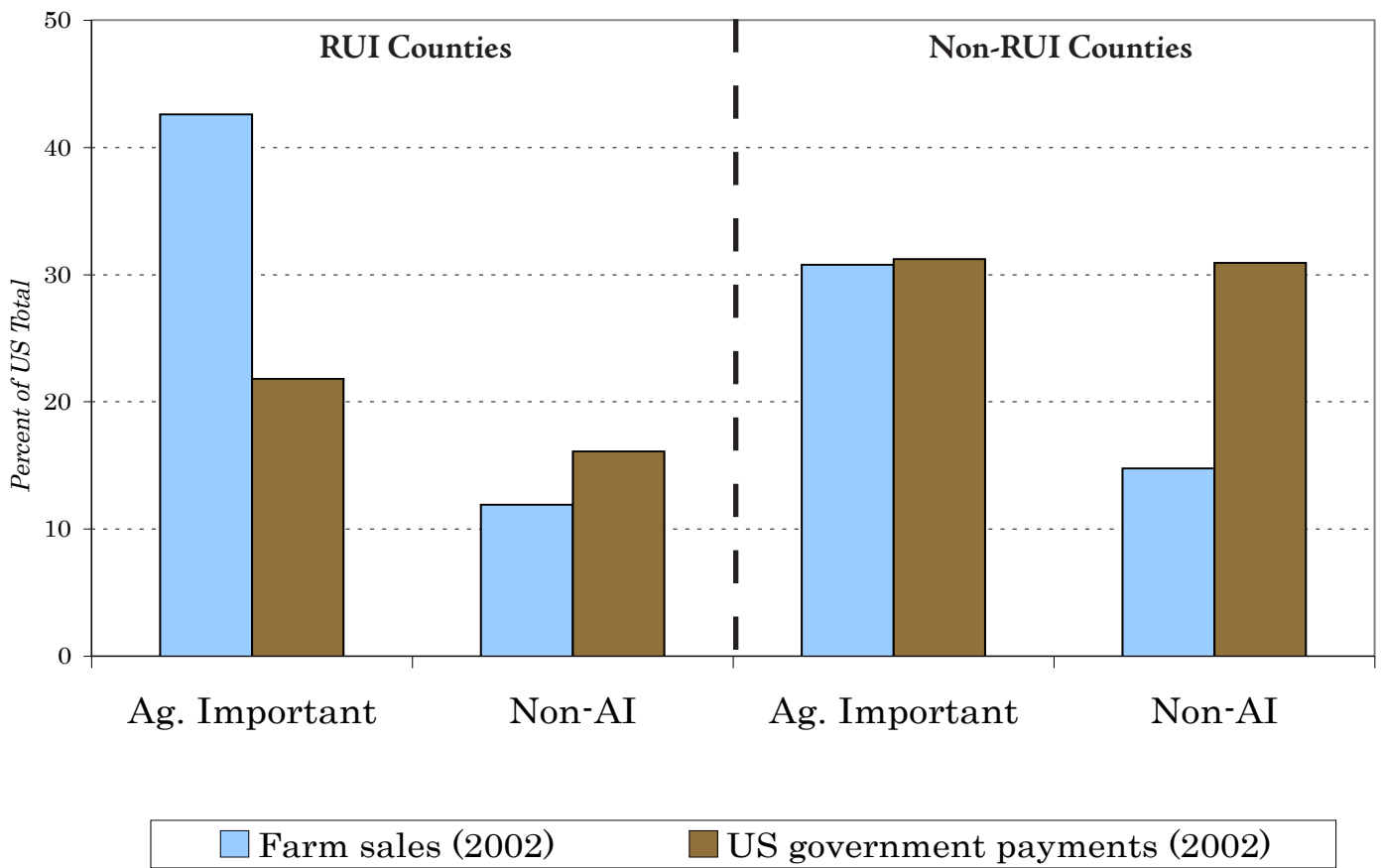
What these patterns of production suggest is that traditional farm programs—particularly the commodity support programs that have historically dominated the federal farm program budget and that support large row crops such as grain and cotton—might not be the most effective or appropriate tools for supporting agriculture at the RUI. Because traditional U.S.

**Figure 3: Farming Trends, by Type of County, 1987-1997**





**Figure 4: Percentage of U.S. Total Farm Sales and Government Farm Payments, 2002, by County Type**



farm programs have focused largely on land-extensive forms of agricultural production, the proportion of government farm payments that were received by RUI counties is notably smaller than in the non-RUI regions (Figure 4). In fact, while 43 percent of farm sales occur in the RUI/AI counties, they only received 22 percent of all government program payments in 2002.

### Designing Agricultural Policies for the Rural-Urban Interface

What policies might contribute to agricultural viability at the RUI? Innovative federal and state agricultural programs have used different policy approaches to target farming systems that are

more common in urban or urbanizing areas. For example, programs designed to support or stimulate innovative direct marketing, value-added processing of local farm commodities, and other urban-oriented farm marketing strategies have become an increasingly important resource to farmers at the RUI. Federal Farmland Preservation Program funds have been critical in leveraging matching funds from state and local governments to support purchase of conservation easements on critical agricultural lands. Conservation programs that pay producers who use environmentally sustainable production practices are likely to both improve natural resource conditions and provide greater potential for alliances between urban residents and local farms at the RUI.

At the local and state level, a variety of local land-use policies have been developed to preserve agriculture land in the face of intense development pressure. These policies can be loosely clustered into three categories: planning, regulation, and incentive-based programs.

- Planning efforts typically involve comprehensive plans that articulate a general goal of agricultural preservation, identify critical agricultural resources, and delineate specific agricultural areas that should be protected from residential or commercial development.
- Regulatory approaches are often based on these comprehensive plans, but use local ordinances and procedures to limit the types and densities of

new land uses that will be allowed in agricultural areas.

- Incentive-based approaches include tax policies that shelter agricultural lands from property taxes and programs to acquire easements on farmland that compensate owners for voluntarily giving up the right to develop their property.

The basic measure of the effectiveness of these programs has been to assess the amount of agricultural land that has been preserved. An additional and equally critical question is the extent to which these programs contribute to the viability of local commercial farms and agribusinesses, particularly with regard to emerging local food systems in the United States and Europe.

**Table 1: Importance of Different Farm Commodities, by Type of County, 2002.**

Commodity Type	RUI		Non-RUI		All Counties
	AI	Non-AI	AI	Non-AI	
<i>Mean percentage of county farm sales</i>					
<b>Crops:</b>					
Cash Grains	15.4	16.4	28.1	21.9	19.9
Nursery/Greenhouse	15.2	24.0	1.8	3.6	12.9
Vegetables	7.5	5.6	3.3	4.3	5.1
Fruits/nuts	7.5	3.3	1.1	3.3	3.7
Tobacco/Cotton	3.1	11.7	2.9	11.8	9.0
<b>Livestock:</b>					
Cattle and Calves	10.8	26.7	26.7	37.0	27.8
Dairy	12.4	11.0	8.9	10.8	10.8
Poultry	25.6	10.9	15.8	8.6	13.3
Hogs	4.4	2.8	9.4	3.6	4.3
<b>Median farm sales per cropland acre</b>	<b>\$936</b>	<b>\$308</b>	<b>\$501</b>	<b>\$234</b>	<b>\$347</b>

## Frederick County, MD

Frederick County, Maryland, is widely recognized for its long history of working to preserve local agricultural land while promoting agricultural economic development. The commitment of substantial state and local resources to acquire development rights on agricultural land has led to the preservation of 20,000 acres of farmland since 1980. Frederick also has a fairly well developed planning and zoning program to regulate residential development outside of urban areas. Between 1987 and 1997, however, the number of farms, farmland, and farm sales declined by 9.4 percent, 8.6 percent, and 24.0 percent, respectively. This generalized pattern of decline and deintensification suggests that local efforts have had mixed success. But given the intense development pressure in Frederick County from the Washington DC and Baltimore metropolitan areas, the absence of a strong local policy environment could well have produced even more drastic declines in Frederick County. A pragmatic conclusion is that solid land-use policies and agricultural economic development efforts will not necessarily result in growth, but can create conditions for agriculture to persist while possibly opening up space for future entrepreneurial development.

## Yamhill County, OR

Yamhill County, Oregon, has been the beneficiary of very strong state-level policies that severely limit the amount of housing growth allowed outside of designated urban areas. Beyond these, however, local governments in Yamhill have pursued relatively little additional land use policies or agricultural economic development programs. The results of this policy mix are apparent in the relatively undeveloped, rural and agricultural landscape of the county, the lack any change in farmland acres, and a 10 percent increase in farm numbers and a 40 percent increase in total farm sales between 1987 and 1997. In addition, there is a strikingly vibrant culture of innovation and entrepreneurship among local farmers. Yamhill farmers were much more likely than other sites in the case study to have made significant investments in their operations, to have adapted to emerging market opportunities, and to have successfully transferred farms to a new generation. A potential challenge for Yamhill County arises from recent changes in state land-use policy that allows some amount of development in the countryside. The challenge may be heightened by a lack of county policies (or underdeveloped policies) stemming from a historical deference to state policies.

## Kent County, MI

Kent County, Michigan, lacks the well established policies found in Frederick and Yamhill counties. A substantial amount of agriculture persists in Kent County, with over 1,200 farms, almost 200,000 acres of farmland, and total agricultural sales exceeding \$140 million. However, encroachment from Grand Rapids was associated with a loss of almost 17 percent of farms and a decline in farmland acres of 8.5 percent between 1987 and 1997. Meanwhile, a strong dairy and orchard industries have sustained the overall level of farm sales (which grew by more than 3 percent during the same period). Although the policy environment is not well developed in Kent County, it is the site of a quite innovative local organizational structure—United Growth for Kent County—that is facilitating an ongoing dialogue between the rural and urban interests of the county. The merit of this type of organizational development is supported by social capital theories, which argue that the organizational and personal relationships created by bringing diverse interests together can lead to an enhanced capacity to act collectively for the community's benefit. In a locality where policies are generally underdeveloped or just beginning to take shape, building an awareness of the diverse local interests and the available policy options can be an important first step in effectively developing and implementing local land-use policies. Thus, Kent is an example of an AI/RUI county where a viable commercial agricultural sector is still an option.



As the matter of agricultural viability becomes a more central and explicit policy goal, there is a shift in focus from land-based policy to the beginnings of a variety of agricultural economic development policies aimed at supporting or developing urban-oriented types of agriculture. Examples include funding staff positions or programs (often in local extension or in community/county economic development organizations) to develop local farmer's markets, increase institutional buying of locally grown foods, ameliorate conflict between farmers and non-farmers, or support other entrepreneurial agricultural ventures that are compatible with the increasing population densities and rising land values associated with urbanizing landscapes. Additional programs and policy efforts in this area will likely increase in coming years as states, counties, and localities seek to capitalize on the economic development potential of local food systems, where a larger share of local food expenditures might be captured by producers and processors of local farm products.

A distinct challenge in developing local land-use and economic development policies across the United States is the diversity of local contexts and their particular commodity mix, local governance structures, and local culture. We offer three case studies of RUI counties<sup>5</sup> to show the diversity of policy responses and their impact on the trajectory of local farm changes (see examples on page 8).

## Implications

Agriculture in urbanizing areas is an important component of our national farm sector. As in non-urban areas, RUI agriculture is evolving. Traditional federal farm policies appear to be an ineffective

mechanism to support RUI farms because they target commodities more commonly raised in the non-RUI parts of the United States. Targeted federal policies could help develop effective land-use policies and support local agricultural economic development programs, ultimately helping to maintain or expand agriculture in RUI counties. Such programs could encourage local policies to move beyond merely preserving farmland to also addressing factors that influence farm production, marketing options, and the size and character of farm enterprises. A more fundamental need is to create local strategies that better connect and articulate the merits of a vibrant agriculture to the vision and goals of each individual community.

The case studies illustrate some of the diverse ways that policies and organizational development can be designed to manage or direct land-use and agricultural change at the RUI. While the diversity of local farming systems are in part the product of larger macroeconomic conditions and changes in traditional farm commodity programs, nontraditional policies (at the local, state, and federal levels) appear to be major influences on the pace and direction of change in our study counties. Policies based on local conditions are also more likely to respond to unique opportunities (and minimize unintended policy outcomes) than national commodity program approaches. Finally, critical to generating political will for many of these policy suggestions is the existence of local leadership and nongovernmental groups that support local farming and promote constructive dialogue between farm and nonfarm populations. The existence of this leadership and commensurate community support of local agriculture can have an important impact on the culture of innovation

and entrepreneurship among farmers who face enough challenges without having to worry about community commitment to local agricultural viability.

## About the Authors

Dr. Douglas Jackson-Smith is an Associate Professor of Sociology at Utah State University. He received his PhD from the University of Wisconsin in 1995 and has 20 years of experience conducting research on dynamics of change in agriculture, land use, and communities in rural and ex-urban/peri-urban environments. He is a member of the Governing Council of the Rural Sociology Society and serves as a member of the National Academies of Sciences Committee on 21st Century Systems Agriculture. His research focuses on structural change in agriculture, land use policy, and human dimensions of water quality and nutrient management in agricultural ecosystems. He can be contacted at [doug.jackson-smith@usu.edu](mailto:doug.jackson-smith@usu.edu).

Dr. Jeff Sharp is an Associate Professor of Rural Sociology and State Extension Specialist in the Department of Human and Community Development at the Ohio State University. He received his PhD from Iowa State University in 1998 and conducts research focusing on community and agricultural change, with a primary focus on change at the rural-urban interface. He directs the biennial Ohio Survey of Food, Agricultural and Environmental Issues (<http://ohiosurvey.osu.edu>) that tracks rural and urban Ohioans views of the farming system and also co-directs the Exurban Change Project (<http://exurban.osu.edu/>), that compiles data and conducts analysis to assist in planning and development at the sub-county level of government in Ohio. He can be contacted at [jsharp.123@osu.edu](mailto:jsharp.123@osu.edu).

This project was supported by the National Research Initiative of the Cooperative State Research, Education and Extension Service, USDA, Grant # 2005-35401-15272.

## Endnotes

1. RUI counties compose roughly one-half of all counties in the United States. We define the “Rural-Urban Interface” as counties with Urban Influence Codes (UIC) 1 through 4 ( or 1,267 counties total), as well the a small number of counties in UIC categories 5–7 that experienced population growth above the national average of 13.15 percent between 1990-2000 (255 counties fall into this category). UIC codes are developed by the USDA-ERS and can be accessed online at [www.ers.usda.gov/Briefing/Rurality/urbaninf/](http://www.ers.usda.gov/Briefing/Rurality/urbaninf/).
2. Agriculturally Important (AI) status is defined by the relative national rank of a county based on total farm receipts in 2002. The counties in the top quartile of sales, plus counties in the second quartile of sales that also have total sales per acre of farmland or cropland in the top quartile, are considered to be AI counties.
3. We focus on this time period because the Census of Agriculture has recently changed how it computes its statistics. Once the new results from the 2007 census are available (in summer 2009), more contemporary trend analysis will be possible. Analysis from 1997 through 2002 with most recent Census of Agriculture data reveals patterns similar to what we find for the 1987–1997 time period.
4. Because missing data can produce biased coefficients and standard errors, we compensated for missing values using multiple imputation; details available from the authors.
5. These three were drawn from a more extensive set of eight county case studies conducted as part of our broader research project (Clark et al., 2007).

## References and Further Reading

Clark, J., D. Jackson-Smith, D. Munroe, J. Sharp, and S. Inwood. (Forthcoming). "The Geography of U.S. Peri-Urban Agricultural Adaptation." In *Proceedings of the TransAtlantic Land Use Conference*, Washington, DC.

Clark, J., S. Inwood, J. Sharp, and D. Jackson-Smith. (Forthcoming). "Community-level Influences on Agricultural Trajectories: Seven Cases across Exurban U.S." In *Proceedings of the Sixth Quadrennial Conference of British, Canadian, and American Rural Geographers*, Spokane, Washington.

Heimlich, R.E., and W.D. Anderson. 2001. "Development at the Urban Fringe and Beyond." *Agricultural Economic Report 803*. Washington, DC: Economic Research Service, U.S. Department of Agriculture.

Hinrichs, C., and T. A. Lyson, editors. 2008. *Remaking the North American Food System: Strategies for Sustainability*. Lincoln: University of Nebraska Press.

Jackson-Smith, D. B. 2003. "Transforming Rural America: The Challenges of Land Use Change in the Twenty-First Century." In *Challenges for Rural America in the Twenty-First Century*, edited by D.L. Brown and L.E. Swanson. University Park: Pennsylvania State University Press.

Thomas, J. K., and F. M. Howell. 2003. "Metropolitan Proximity and U.S. Agriculture Productivity, 1978-1997." *Rural Sociology* 68 (3): 366-386.

USDA. Various years. *Census of Agriculture, State and County Data*. Washington, DC: U.S. Department of Agriculture.

## Potential Rural Realities Authors

The *Rural Realities* Editorial Board has identified the following as high priority issues:

- The Importance of the Rural Health Care
- Regional Collaboration: Are There Benefits and Costs for Rural Communities?
- Linking Conservation, Natural Resource Management, and Rural Development: Some New Opportunities?
- Deregulation: How Has it Affected Rural Areas
- What Will the New Farm Bill Mean for Rural America?

Interested in addressing one of the high priority topics, or suggesting other possible topics? Please prepare a one-page abstract of your proposed article and submit it to the series editor, or contact him to discuss your ideas.

Bo Beaulieu  
Editor, *Rural Realities*  
ljb@srdc.msstate.edu

## About Rural Realities

*Rural Realities* is a quarterly publication of the **Rural Sociological Society (RSS)**. Its purpose is to: (1) Provide valuable insights on the current and emerging issues impacting people and places in rural America and beyond; and (2) Offer policy and program options that might prove effective in addressing important rural challenges and opportunities. Articles showcased in the series draw upon high quality social sciences-based studies conducted by researchers and practitioners located within universities/colleges, government, philanthropic, and nonprofit organizations.

The **Rural Sociological Society** is a professional social science association that promotes the generation, application and dissemination of sociological knowledge. The Society seeks to enhance the quality of rural life, communities and the environment through research, teaching, and outreach/extension education.

## The Rural Realities Editorial Board

### Series Editor:

- **Lionel J. "Bo" Beaulieu**  
Southern Rural Development Center  
Mississippi State University  
E-mail: ljb@srdc.msstate.edu

### Editorial Board:

- **Walt Armbruster**  
Farm Foundation
- **Frank Boteler**  
Economic and Community Systems,  
CSREES/USDA
- **Alisha Coleman**  
Penn State University
- **Tadlock Cowan**  
Congressional Research Service
- **Al Cross**  
Institute for Rural Journalism and Community Issues,  
University of Kentucky
- **Brian Dabson**  
Rural Policy Research Institute,  
University of Missouri
- **Robert Gibbs**  
Economic Research Service, USDA
- **Steve Murdock**  
U.S. Census Bureau
- **William O'Hare**  
Visiting Senior Fellow – The Carsey Institute
- **Jim Richardson**  
National Rural Funders Collaborative
- **Louis Swanson**  
Colorado State University
- **Rachel Tompkins**  
Rural School and Community Trust
- **Michelle Worosz**  
Michigan State University

### Technical Assistance Provided By:

- **Barbara Ray, Communications Specialist**  
Hired Pen, Inc., Chicago, Ill.
- **Jeremy S. Robbins, Freelance Designer**  
Jackson, Miss.