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*The Changing Structure of Agriculture and Rural America:
Emerging Opportunities and Challenges*

Tadlock Cowan, Resources, Science, and Industry Division

Updated October 30, 2001

Abstract. Several significant trends in the evolving structure of agriculture are discussed in this report: a continuation in the trend toward fewer and larger farms; a potential acceleration of that trend as production shifts to more tightly integrated and vertically coordinated production through supply chains; greater environmental pressures on conventional agricultural production practices stemming from urban and suburban interests; and changing food consumption practices.

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RL3172 **The Changing Structure of Agriculture and Rural America: Emerging Opportunities and Challenges**

October 30, 2001

Tadlock Cowan
Visiting Scholar in Economic Growth and Entrepreneurship
Resources, Science, and Industry Division

The Changing Structure of Agriculture and Rural America: Emerging Opportunities and Challenges

Summary

When agricultural production and related businesses dominated rural economies, policies that strengthened and improved agriculture tended to strengthen and improve the well-being of most of America's small communities and rural residents. As the strength of this linkage declined over the past century, many have felt that rural policy has been left largely fragmented and unfocused, comprising a patchwork of programs and initiatives rather than a coherent policy. Yet agriculture remains the primary policy framework for Congress's consideration of rural issues. Significant changes are occurring in the structure of the U.S. agro-food system. These changes are likely to pose important questions about the direction and coherence of current rural policy. Several significant trends in this evolving structure of agriculture are discussed in this report: (1) a continuation in the trend toward fewer and larger farms; (2) a potential acceleration of that trend as production shifts to more tightly integrated and vertically coordinated production through supply chains; (3) greater environmental pressures on conventional agricultural production practices stemming from urban and suburban interests; and (4) changing food consumption patterns.

Conditions in rural America today are quite mixed. Some rural areas, such as those within commuting distances of metropolitan areas or blessed with environmental amenities and/or affluent retirees, are thriving. Other rural areas with little employment, few public services, persistent poverty, and fewer possibilities, are spiraling downward. Declines in farming and in many rural areas and opposition to industrializing trends in agriculture are compelling policymakers and rural areas to seek new sources of job growth, innovative ways of providing public services to sparse populations, as well as new ways of integrating agriculture into changing rural economies. Manufacturing, a major focus of rural economic development over the past 40 years, is also threatened by increasing low-wage international competition.

Congress has expressed its concern with rural communities most directly through periodic omnibus farm bill legislation, most recently in the 1996 Federal Agricultural Improvement and Reform Act (P.L.104-127) and in its current deliberations over a new farm bill, the Farm Security Act of 2001 (H.R.2646). The Farm Security Act, as recently passed by the House, has a rural development title. Questions have been raised about whether agriculture policy and rural policy are compatible given the large proportion of rural non-farm communities. There are questions about whether current rural policies tend to reinforce rural communities' past competitive advantage or whether they assist the creation of entrepreneurial capacity within rural areas to generate new competitive advantage. While significant debate exists over what elements might comprise a comprehensive, integrated rural policy, continuing along past policy paths seems increasingly less likely to produce the socioeconomic conditions that will assist rural America in developing vibrant, competitive, and sustainable communities for the future.

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The Changing Structure of Agriculture and Rural America: Emerging Opportunities and Challenges¹

Introduction

Rural America's problems and opportunities appear as recurrent themes when agricultural policy is debated. Issues affecting the economic structure of U.S. food and agricultural production often lead to parallel discussions about their implications for rural America. This is understandable given the close connections between agriculture and rural life that for so long have characterized U.S. rural history. Although that relation is considerably more complex today, to speak of rural America and not immediately to appreciate the major role that agriculture has played in shaping the rural physical landscape and rural social organization is all but impossible. However accurate or idealized these perceptions are, rural America and its agrarian ethos continue to hold a distinctive if not unique place in the minds of most citizens. Contemporary policy concerns about rural well-being and the future potential of rural America are, at root, concerns about the wide range of people, businesses, and institutions inhabiting a special place in U.S. social and economic life.

Conditions in many parts of rural America today are quite mixed. Some rural areas, such as those adjoining metropolitan areas or blessed with environmental amenities and/or affluent retirees, are thriving. Other rural areas, locations of the businesses that more economically privileged areas can afford to forego or, worse, locations with little employment, few public services, and fewer possibilities, are not doing well. The significant socioeconomic development possibilities that do exist in many of these areas will be influenced by rural and agricultural policies that reflect and that build on the important capacities that rural areas might develop and expand. Public policy for rural development is made more difficult by the fact that rural planning and development involves multiple policy objectives targeted by multiple policy instruments. The Government Accounting Office identified 88 programs administered by 16 different federal agencies that targeted rural development.² While these programs have unquestionably benefitted many families, businesses, and communities, significant inequality and structural disadvantages exist between different rural areas as well as among the 20% of the population currently living in rural America.

While many federal agencies address rural issues, this attention is more often than not an adaptation of predominantly urban and suburban-based initiatives or of

¹Prepared under supervision of Jean Yavis Jones, Specialist and Head of Agriculture and Food Policy Section, Resources, Science, and Industry Division.

²*Rural Development: Federal Programs that Focus on Rural American and its Economic Development.* GAO/RCED-89-56-BR, January, 1989.

farm support programs. The Eisenhower Administration, however, began a Rural Development Program in 1955 directed at assisting low-income farmers. Since the 1972 Rural Development Act (P.L.92-419), rural policy has been a specific concern of the Congress. The Rural Development Act of 1980 (P.L.96-355) proposed an integrated approach to rural issues based on the need and goals of local communities, sub-state areas, and multi-state regions.

Omnibus farm bills have been among the most highly visible vehicles by which the Congress has regularly addressed rural issues. Title VII of the 1996 Federal Agricultural Improvement and Reform Act (P.L. 104-127, the 1996 farm bill) contains a rural development title. Provisions in that title reflect the Congress's concern with provision of physical infrastructure, creation and expansion of rural businesses, and the quality and availability of housing. Concerns for public service and improving rural social welfare are also apparent in provisions supporting telecommunications development and the Fund for Rural America. Title VI of the proposed 2002 farm bill (H.R.2646) recently passed by the House also deals with these issues and provides for new funding to support strategic rural development planning and innovations in value-added agricultural businesses.

Historical Foundations. The rural sector has always played a vital role in U.S. prosperity and well-being. A review of federal policy for the rural sector reveals four dominant themes over the past 200 years: (1) land distribution and management, (2) human resources and physical infrastructure development, (3) financial support for farmers and ranchers, and (4) poverty alleviation.³ Until the 20th century, rural policy meant mostly the distribution of approximately a billion acres of land from the federal government to private ownership. Through government-provided roads, canals, bridges, and railroads, the federal goal was to stimulate population expansion and settlements as rapidly as possible. In 1862, the Homestead Act altered the existing system of fee simple purchase of acreage from the government to a system of free or inexpensive land grants of 160 acres to settlers willing to live on the land for at least five years. In addition, the railroad grants of 1862 reinforced the dominant objective of federal policies at that time to settle people, create communities, establish transportation and communication capacity, and develop wealth through agriculture, mining, and forestry.⁴ The establishment of the Department of Agriculture in 1862 created within the federal system a significant institution for the rural constituency. The objective of the Morrill Act of 1862 was to build up the human capital of the frontier societies, as well as the long-established agricultural economies of the East and South, through federal land sales to support what would later become the Land Grant universities.

Land distribution and infrastructure development and support tended to define federal rural policy in the 19th and early 20th centuries. By the end of the 19th century, the number of farms was declining as cities grew in economic importance and unemployed agricultural labor migrated to urban areas. The positive social values presumed to characterize small towns and agrarian livelihoods, however, became an

³Lapping, Mark B. "American rural planning, development policy and the centrality of the federal state: An interpretive history." *Rural History* 3(2); 219-242, 1992.

⁴Shannon, Frederick A. *The Farmer's Last Frontier: American Agriculture, 1860-1897*. Armonk, NY; M.E. Sharpe, 1989 (1945).

important theme of rural policy. A reform movement, deeply suspicious of cities and urban residents and strongly committed to the Jeffersonian/romanticist idealization of farming, emerged during the early 20th century. Taking its name from the Country Life Commission established by President Theodore Roosevelt in 1908, the Country Life movement sought to speak for rural America and its interests and came to define much of the debate over rural development in the pre-World War I era.

With clear understanding of the emerging power of the urban-industrial system, Country Lifers sought a secure place in it for rural America. They argued that the rural sector lagged behind more dynamic sectors because rural areas had failed to take advantage of advanced technologies and institutional reforms to create modern, progressive rural and agriculture sectors. The Country Life movement placed an emphasis on improved technology, specialization, efficiency, and modern education and training as sources for solutions to rural and agricultural problems. To a significant extent, the Country Life movement established the direction and focus that rural development policy has taken into the 21st century.⁵ From these historical underpinnings, rural economic development, farming modernization, and rural social welfare have been regarded as inextricably linked.

A Changing Relationship. This view of the relations between rural development, farming, and rural welfare is considerably more difficult to sustain today as the structure of contemporary production and changing global agro-food markets lessen the role of agriculture in rural economies and rural social life and as urban and global systems increasingly influence virtually all areas. In the 316 farming dependent counties (i.e., where 20% or more of labor and proprietor's income is derived from farming), policy changes that affect farm commodity payments or credit can still have large impacts on community banks, schools, and local businesses that depend on farm spending. But agriculture policy (or more specifically, farm commodity programs) as proxy

Box 1: What is Rural?

Rural and non-metropolitan populations have often been treated as synonymous. **Metro** and **non-metro** areas are defined on the basis of counties. Metro areas contain (1) core counties with one or more central cities of at least 50,000 or with a Census Bureau-defined urbanized area (and a total metro population of 100,000 or more and (2) fringe counties that are economically tied to the core counties. Non-metro counties are defined as those places outside the boundaries of metro areas that have cities with populations under 50,000. **Rural areas** comprise places with open territory and fewer than 2,500 residents. **Urban areas** comprise larger places and densely settled areas around them. As the relation between metro and non-metro areas becomes more complex, researchers are beginning to use more precise categories, e.g., non-metro-adjacent, non-metro non-adjacent areas, rural-urban commuting codes, etc. See John B. Cromartie and Linda L. Swanson, "Census tracts more precisely define rural population and areas." *Rural Development Perspectives*, Vol. 11, 3, pp.31-39, May, 2001.

⁵Lapping, *op. cit.*, p. 225. It must also be noted that the changes advocated by the Country Life Commission were resisted by many rural people who did not welcome the implications of a more industrialized agriculture. See Danbom, David. *The Resisted Revolution*. Ames, IA: University of Iowa Press. 1979.

for rural development policy and rural well-being is substantially less influential in other rural economies. In rural areas today, less than 8% of the workforce is employed in farming and agricultural services; and most household income for most farm families now comes from off-farm sources. While the extent of dependency as measured by jobs in the food and fiber system varies significantly by region, only 2% of rural residents identify farming as their primary occupation (See Table 1); and net farm income today amounts to only 2-3% of total non-metro personal income. There is, in fact, now remarkable similarity in the sectoral shares of employment (i.e., agriculture, manufacturing, industry, and services) between metro and non-metro places.⁶ While a strong farming sector is and will remain a cornerstone to rural well-being in farm-dependent regions, most rural people have little or no direct relation to agriculture.

Emerging policy issues surround the question of whether current farm policies, which rely heavily on commodity support payments and subsidies to a few production sectors, help or hinder the future development of economically viable rural communities. Research, for example, has suggested that larger farm program payments as a share of total cash marketing receipts are associated with greater population loss from rural counties after controlling for other variables affecting population migration.⁷ Continuing socioeconomic and population decline in farming and rural areas and Congressional concern over the costs of supporting the remaining farms and related businesses are compelling policymakers and rural areas to seek new sources of job growth, innovative ways of providing public services to sparse populations, and new ways of integrating agriculture into changing rural economies.

Table 1: Food and Fiber System Jobs by Region, 1997
(in percentages)

Occupation	Northeast	North Central	South	Midwest	West	United States
Farming	2.23	6.44	7.24	19.49	7.97	7.49
Food Processing	4.45	5.99	5.32	8.34	5.49	5.59
Textiles	5.00	.78	7.32	1.34	2.94	4.37
Other Manufacturing	6.05	7.60	5.25	4.79	3.53	5.37
Wholesale and Retail	38.51	35.12	32.75	29.54	32.17	33.73
Transportation	2.55	2.63	2.37	2.55	2.36	2.48
Food Service	25.38	28.85	26.00	23.09	27.83	26.50
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: USDA/ERS analysis of U.S. Department of Commerce data

⁶Mills, Edwin S. "The location of economic activity in rural and non-metropolitan united states. Pp. 103-133 in E.N. Castle (ed.), *The Changing American Countryside*. University of Kansas Press, Lawrence, KS, 1995.

⁷Goetz, Stephen J. and David L. Debertin. "Rural population decline in the 1980s: impacts of farm structure and federal farm programs." *American Journal of Agricultural Economics* 78(3), August, 1996.

What, then, are some of the major sources driving change in agriculture at this time and what might their implications be for rural communities and for rural policy more generally? While by no means an exhaustive listing, four interrelated trends shaping the contemporary structure of agriculture seem especially pertinent in understanding potential changes that may affect significant parts of rural America. **First**, farm structural characteristics like size, specialization, and organization are likely to continue having important implications for rural areas, especially in those areas where agriculture is a significant part of the rural economy, but also in areas where small, mixed-production farming enterprises exist within a varied local and regional economy. **Second**, vertical integration and coordination in production are accelerating certain changes in the organization of agriculture and, with it, how rural communities and regional economies might adapt to the effects of these new forms of production. These two changes are, in important ways, driven by an increasingly competitive global agro-food production and trading system and underscore the importance that shifts in the macro-political economy play in driving change in local areas. **Third**, environmental concerns are assuming an important role in agricultural production decisions and may assume an even greater role in shaping agricultural policy in the future. **Fourth**, while the implications remain unclear, changing food consumption patterns, especially in the advanced industrial economies, are shaping social and technological practices in agriculture. These changing consumption patterns also potentially open new development possibilities based on local innovations in agricultural production, processing, and marketing.

Policy Questions. Congressional interest in rural policy involves a wide range of issues, including agriculture, forestry, and mining, community infrastructure, natural resource conservation and management, and economic development. Current challenges to and reform of existing federal rural policies is evolving in an environment of increasing concern about national competitiveness, a shift away from agriculture toward manufacturing and services, new federal political strategies, and the emergence of new political interests. A restructuring rural America is producing pressures for different policies and raising new questions about what Congress's role should be in shaping rural policy. Among them are:

Does Rural America both require and warrant distinctive policies oriented to its particular social, geographic, and economic characteristics?

What role can federal policy play in assisting rural areas to assemble the information, services, infrastructure, and work forces needed to attract and retain new sources of economic growth?

Should rural policies focus largely on local economic development or on broader aspects of rural welfare and sustainability?

Do existing rural policies reinforce older competitive advantages or are they assisting rural areas in creating new sources of competitive advantage?

What elements would comprise comprehensive, flexible, integrated rural policies?

What is the most effective relation between states, local communities, and the federal levels in designing and implementing rural policies?

The Structure of Agricultural Production: Background and Analysis

Farm Structure. The first census (1790) showed that the U.S. was primarily an agricultural economy. By 1880, only about half the population was still farming; the 1920 census found nearly a third of the total population in farming and nearly two-thirds of rural America in farming. While the steady decline in farming has long been noted, perhaps one of the most profound transformations of rural America since the 1920s has been the shift from a largely independent class of farm operators and small retail businesses that serviced farming needs to a mostly manufacturing and service sector and wage-earning rural America today. Although wage labor also characterizes farming, an important shift in agriculture has been in the emergence of a dual farm structure, one made up of large commercial farms producing the bulk of agricultural commodities, and a small-farm sector that, while comprising the larger number of farms, contributes little proportionately to total value.⁸ This duality in farm structure is not entirely new. For example, small commodity production in the antebellum South existed alongside large plantation holdings; and large cattle ranches in the West continue to exist alongside much smaller ranches and mixed-farming enterprises. The degree of this duality, however, has greatly intensified in the past 25 years as the proportion of large, industrialized farms has grown.⁹

Land and the policies that underlie its acquisition and use are central to the history of farming. The three predominant uses of land in the contiguous 48 states are grassland pasture and range (578 million acres), forest (553 million acres), and cropland (455 million acres).¹⁰ Grassland pasture and range, 31% of major land uses in the 48 states, has declined since the mid-1960s when it was 636 million acres. Cropland includes land used for crops, cropland idled (including land for the Conservation Reserve Program), and cropland used for pasture. These components vary more than total cropland. Cropland used for crops has ranged from 383 million acres in 1949 and 1982 to 331 million acres in 1987; corn, soybeans, wheat, and hay accounted for 80% of all crop acres harvested in 1999.¹¹ Total cropland varied about 8% between 1945 and 1997, ranging from 478 million acres in 1949 to 444 million acres in 1964. The 1997 cropland base of 455 million acres was the lowest since 1964.

⁸For a broad overview of U.S. agriculture production and farm structural characteristics, See Canada, Carol, *Agriculture in the United States: Selected data*, CRS Report 30712, October, 2000

⁹Albrecht, Don E. "The changing structure of U.S. agriculture: dualism out, industrialization in." *Rural Sociology* 62(4), 1997.

¹⁰USDA. Economic Research Service. *Agricultural Resources and Environmental Indicators*, Chapter 1.1. 2000

¹¹Ibid.

No broad trend in cropland use is discernable. Rather, cropland use reflects two major cycles where cropland moves from idled land to crop use and back again. While total cropland has varied up and down and generally declined since 1969, greater shifts have occurred between cropland used for crops and cropland idled, mostly because of federal programs. Cropland idled in federal programs has decreased about 25 million acres since 1995 with the elimination of annual commodity set-aside requirements and changes to the Conservation Reserve Program.¹²

The official definition of a farm is an operation producing \$1000 in gross agriculture sales annually. Attempting to better understand the ramifications of a changing farm structure, USDA developed a different typology of farms in the mid-1990s (Box 1) based not only on sales, but also on the occupational choice of the operator, operator household income, and farm characteristics. Using this typology, survey data from the 1997 Agriculture Resource Management (ARM) Study revealed that “large”, “very large”, and “non-family” farms accounted for 61% of the value of U.S. farm production, but made up only 8% of the farm units. “Higher-sales” small farms (at 18%) and all other small farms¹³ (at 21%) account for 39% of the value of production, but incorporate 72% of total farm asset value, including land. Regardless of farm type, the household wealth of most operators who listed farming as their major occupation came from the farm and these households also had an average net worth of \$1.4 million, considerably higher than the U.S. average of \$205,900.

Box 2: Farm Typology

Small Family Farms: Sales less than \$250K

Limited-resource Farms: Farms with sales under \$100K, farm assets under \$150K, and total operator income under \$20K

Retirement Farms: Small farms whose operators report they are retired*

Residential/Lifestyle Farms: Small farms whose operators report a major occupation other than farming*

Farming-Occupation Farms: Small farms whose operators report farming as their major occupation*

Lower-Sales Farms: Sales less than \$11K

Higher-Sales Farms: Sales between \$100K and \$249,999

Large Family Farms: Sales between \$250K and \$499,999

Very Large Family Farms: Sales of \$500K or more

Non-Family Farms: Non-family corporations and cooperatives as well as farms operated by hired managers

*Excludes limited-resource farms

Source: USDA-ERS, 2001

¹²Ibid.

¹³The definition of “small farm” was developed by the National Commission on Small Farms in its report, *A Time to Act* (1998), which used the \$250,000 gross sales as its cutoff.

A similar 1996 ARM survey also revealed other important operating characteristics of farms and farm households.¹⁴ While “large” and “very large” farm operators reported farming as their major occupation, household income from off-farm sources was not insignificant for these farm households, averaging 30% and 18% respectively. By 2001, “large” farm households derived nearly 40% of total income from off-farm sources. “Very large” farms had household incomes averaging \$193,800 (4 times the average U.S. household income of \$47,100) according to the 1996 survey and, along with “large” farms, tended to specialize in cash grains. “Large” and “very large” farms account for only 8% of farms, but they produce nearly 57% of total agricultural value.

Approximately 50% of all U.S. farms in 1996 were “limited resource”, “retirement”, and “residential/lifestyle” farms, but they accounted for only about 6% of total agricultural production. These farm households relied almost entirely on off-farm income sources. “High-sales” farms, most of which are located in the Lake States, Corn Belt, and Northern Plains, had household incomes not significantly different from the average U.S. household income and derived 57% of household income from off-farm sources. As with “large” and “very large” farms, “high-sales” farms also tended to specialize in cash grains as well as dairy. Over one-third of “retirement” farms and nearly half “residential/lifestyle” farms specialized in beef production. For another 21% of “retirement” farms, payments from the Conservation Reserve Program provided the sole source of farm income.

“Lower-sales” farms had average household incomes of \$31,500, significantly lower than the U.S. average. These farms also relied heavily on off-farm income sources and often specialized in beef production rather than cash grains. “Limited-resource” farms are found mostly in the South (62%) and over half specialized in beef. Most “limited-resource” farmers did not report farming as their main occupation; nearly 49% were retired. Over 40% of Black farmers are “limited resource” farmer compared to 13% of White farmers. Household income for “limited resource” farmers averaged \$13,600, but because they lost an average of \$3000 on their farming operations, their average household income was actually \$10,600, about a fifth of the national average.

These data suggest that traditional farm support programs including the transition payments under the Federal Agricultural Improvement and Reform Act of 1996 (P.L.104-127) may be of limited use to most farms and thus potentially make contributions to rural well-being only in those areas where there are “large”, “very large”, and “non-family” farms specializing in crops supported by farm payments. While direct payments to farmers have tripled since 1996, they represent only a fraction of total federal spending in non-metro areas, averaging about \$182 out of a total of \$4,725 per capita federal spending in 1998. Metro areas in 1998 averaged about \$5,212 per capita in federal funding. In the 316 farming-dependent counties, average farm payments are much higher, averaging \$937 per capita out of a total of

¹⁴Hoppe, Robert A. “Sources and levels of farm household income vary by type of farm.” *Rural Conditions and Trends*, 9, No.2 (1999):107113.

\$5,369 in per capita federal spending in 1998.¹⁵ In these counties, farm payments can have important effects, especially in their capacity to support other rural businesses. In the past several years, emergency farm payments have been a significant factor in preserving farming and related businesses in regions where farmers specialize in cotton, grains, and dairy. Farms specializing in beef or fruits and vegetables are not recipients of direct farm support payments, although certain commodities, e.g., apples, have been the target of emergency payments over the past several years.

The characteristics of farms and farm households influence and are influenced by the surrounding rural socioeconomic environment. From the evidence presented above, for example, proximity to off-farm income sources strongly influences household income. Whether off-farm employment is high or low-wage, seasonal, part-time, etc., may also influence the stability or type of farming enterprise as well as the resources that can be directed to the enterprise. Similarly, proximity to urban and suburban markets could make certain types of farming more successful in the future, e.g., high-value organic production, fresh fruits and vegetables, and nurseries.

As the typology in Box 1 suggests, the official definition of a farm, based only on sales, lumps together groups with significantly different characteristics, needs, and future prospects for growth. Declines in bulk commodity prices, for example, may affect different groups of farmers differently. Such declines may suggest large effects on specialized grain farms, but, when total household's income is considered, the actual effects may be different depending on farm size and efficiency, where the farm is located, the farm operator's managerial capabilities, off-farm income sources, etc. Similarly, for retired farmers or residential/lifestyle farms, declines in farm prices may be only modestly important, if at all, to changes in household income. In either case, broader macroeconomic changes can often have equal or greater effects on household incomes and rural areas more generally than the farm economy alone.

The Emerging “New Agriculture” of Supply Chains. The long-standing trend toward fewer, larger, and more specialized commercial farms and ranches in the U.S. (horizontal integration) is well documented. Not only have these trends been observed for many years, recent data suggest they may be accelerating as pressures increase from global competitors and as new agricultural technologies continue to reinforce the substitution of capital for labor to create scale efficiencies. Rapid and increasing consolidation and coordination (vertical integration) in agriculture are indicators of a more fundamental restructuring occurring in the food and fiber system today. A growing share of commodity producers, mostly within animal production currently, are joining “supply chains.”¹⁶ A supply chain is a tightly organized production, processing, and marketing system formed by agribusiness firms that, in its most coordinated form, could potentially link each step of food production from proprietary genetic material to the grocery shelf. Poultry raising, especially broiler

¹⁵Gale, Fred. “*Farm payment and the rural economy.*” *Agricultural Outlook*, October, 2000.

¹⁶Drabenstott, Mark. “*Rural America in a new century.*” *Main Street Economist*, Federal Reserve Bank of Kansas City, October, 1999.

production, is almost completely conducted under producer contracts with approximately 40 firms producing 97% of all broilers.

A distinguishing characteristic of supply chains is their reliance on contractual agreements, licenses, joint ventures, integrated ownership, and other business arrangements with different segments of the food system. These alliances with producers may permit contracting firms to by-pass more traditional commodity markets. To better insulate themselves from price volatility and dwindling markets, many commodity producers are abandoning their independent operations and adopting contract commodity production arrangements with agribusiness firms. According to the USDA's Economic Research Service, about 35% of the total value of U.S. agricultural production in 1998 was produced under some form of contractual arrangement.¹⁷ Piglets, for example, raised under contract can be provided by the agribusiness firm; fed on specific livestock feed provided by the firm and on a schedule stipulated by the firm; to be delivered at a specified time and weight to the firm's slaughtering plant where the meat is packaged and transported either to a grocery or to a processed food plant and finally retailed to the consumer.

Depending on the degree of vertical integration, a food company could pass the hog to each stage along the food line, perhaps never relinquishing actual ownership until the consumer purchases the product at the meat case or in a frozen dinner. Starting, perhaps, with the intellectual property rights of a genetically modified organism (e.g., proprietary swine breeds with higher lean-to-fat ratios or those less susceptible to certain diseases common to intensively raised livestock), raising, slaughtering and processing, and ending with the retail sale of the pork product, the supply-chain revolution occurring in livestock production is a model increasingly being looked to by other sectors, e.g., speciality grains, fruits and vegetables, tobacco.¹⁸

Like previous agricultural changes, technology will likely play a key role in the evolution of supply chains. In the past, technology has been a major force in driving the shift of farm activities off the farm and into the input industries. Advances in agricultural biotechnology can be expected to do the same, but with a distinct variation. Initial biotechnology development in agriculture focused on changes in bulk commodities, e.g., herbicide resistant soybeans and pest resistant corn. Much current research in biotechnology is focused on the characteristics of farm products, not just how the products are produced. Proprietary products lend themselves to the structure of supply chains as the contractor firms target new bio-engineered products to particular market niches. Some farmers in some regions may choose to continue producing bulk commodities; other farmers may choose to contract with an agribusiness firm to produce a value-added bio-engineered product.

As supply chains and other forms of vertical integration become more prevalent in a production sector, the number of growers supplying the commodity is likely to decrease. This has occurred in poultry; it is currently occurring in pork production; it has started in beef; and niche markets are likely to make it occur in some crops.

¹⁷*Agricultural Resource Management Study*, 1998.

¹⁸Nearly 100% of flue-cured tobacco is now produced under contract.

While marketing contracts may displace few resources from farms and communities, production contracts under integrated ownership may have significant local effects. By contracting with only a few very large producers, a firm can achieve significant economic efficiencies, in part, by minimizing the transaction costs associated with managing many business alliances and by minimizing various marketing risks. As swine production has followed supply chain arrangements, for example, the number of hog producers has declined from nearly 500,000 in the early 1980s to approximately 85,000 in 2001.¹⁹ This shift in commodity production through supply chains may also be reflected in a decline in the number of hog slaughtering plants over the past twenty years from over 500 to about 180. Some industry observers believe that under a supply chain arrangement, 50 or fewer pork producers and 12 state-of-the-art packing plants could, in the near future, supply the entire U.S. pork market.²⁰

Some contract producers might find themselves with decreasing power to negotiate the terms of their contracts as the relative power of large processors to determine the conditions of production increases.²¹ Although some states, e.g., Minnesota, have adopted measures to better protect contract producers, some observers believe that because producers negotiate individually with a processor, often with contract confidentiality clauses, individual producers can be at a disadvantage.²² In 1997, approximately 42% of hogs were produced under contracts and 57% of hogs were sold under marketing contracts.²³ While the movement of supply chains into cattle production has been much slower than it has into swine production, the consolidation trend is much stronger in the cattle feeding sector. In 1980, large feedlots (<32,000 head) accounted for less than a third of market share. By 2000 that share had increased to nearly half.²⁴

As agribusiness firms consolidate to more seamlessly integrate their production systems, formerly independent producers could find their marketing options reduced. The consolidation across sectors of the beef processing industry over the past decade, for example, has resulted in the U.S. Department of Justice designating the sector

¹⁹Barkema, A., M. Drabenstott, and N. Novack. "The New U.S. Meat Industry." *Federal Reserve Bank of Kansas City Economic Review*, Second Quarter, 2001.

²⁰ Benjamin, G. "Industrialization in hog production: implications for midwest agriculture." *Economic Perspectives*, Federal Reserve Bank of Chicago, 1997

²¹Some economists have suggested that rapid expansion of consolidation in agriculture has also exposed agribusiness firms to increased financial pressures. Such stress could leave producers who are dependent on contracts or marketing agreements with large agribusiness firms vulnerable. See Kohl, David. "Reflections and perspectives" *Ag Lender*, June 21, 2001.

²²Etka, Steve. "Contract agriculture: serfdom in our time." National Campaign for Sustainable Agriculture, *Update*, June, 2001

²³Lawrence, J., G. Grimes, and M. Hayenga. "Production and marketing characteristics of U.S. pork producers, 1997-1998. Research Report, Department of Economics, Iowa State University, 1999.

²⁴Barkema, A. et al., *op. cit.*, p.37.

“highly concentrated” and the pork industry as “moderately concentrated.”²⁵ Some researchers believe that increasing consolidation in agriculture through mergers and acquisitions of other links in the food chain could reduce market opportunities, increase the potential for anti-competitive activity, reduce the ability of some farmers and independent producers to obtain fair prices, and/or reduce product choice. Other industry experts would argue that in some industries fewer firms may result in greater market efficiencies and, particularly for the case of agriculture, perhaps less extensive environmental implications stemming from many small, dispersed producers. A few firms producing at high output, it is argued, can be more economically efficient than many firms with smaller market share.²⁶ Further, these researchers argue, market power can be kept in check through threats by innovative competitors eager to capitalize on the inefficiencies of certain market abuses.²⁷

What is of particular significance, if still poorly understood, are the implications for rural areas in the supply chain revolution in agricultural production. Historically, agricultural production was relatively widely distributed across the rural landscape. Supply chains appear to be redrawing the landscape of dispersed agricultural production. Poultry production and swine production were once widely dispersed across the country. Today, broiler production, which is almost exclusively done under producer contracts, is found mostly in the South and Southeastern U.S. and upper Midwest. Poultry processing plants are even more concentrated within those regions. Similarly, beef production, with large feed lots and nearby meat packing plants, suggests a very different agricultural geography, one with potentially significant social and environmental effects on rural communities where such production occurs.

Rural areas specializing in producing bulk commodities for supply chains, e.g., farm-dependent areas in the Great Plains or Corn Belt, are likely do so in a local or regional environment of decreasing diversity, and over time, still fewer farms. Other rural communities, however, will attempt to connect themselves to the supply chains as new sources of employment. The emergence of large livestock feeding operations and meat packing facilities proximate to Midwestern communities may have different socioeconomic impacts than current forms of commercial agricultural organization.²⁸

²⁵In its antitrust oversight, the U.S. Justice Department measures industry concentration by the Herfindahl-Hirschmann Index (HHI) rather than the more commonly used measure of the market share held by the top four or five firms (CR4 or CR5). The HHI is calculated by summing the squares of the individual market shares of all firms in a particular market. An HHI below 1000 indicates an unconcentrated market; an HHI between 1000 and 1800 is moderately concentrated; an industry with an HHI over 1800 is highly concentrated. In 1998, the HHI was 1936 for beef processing and 1036 for pork processing.

²⁶King, John L. “*Concentration and technology in agricultural input industries*. USDA-Economic Research Service, AIB-763, March, 2001.

²⁷Several bills have been introduced in the 106th and 107th Congresses that address concentration and antitrust issues. For a review see Heykoop, Jerry and Alejandro Segarra, *Merger and Antitrust Issues in Congress*, CRS Report RS20562, January 2001.

²⁸For example, immigration to and high-turnover in Midwestern meat packing facilities has had impacts on many small school systems, on housing, and on community social services. See Fitchen, Janet. “*Why rural poverty is growing worse: similar causes in diverse settings.*”

(continued...)

Even then, the number of rural communities that benefit from the employment that processing and meat packing will bring, is likely to be limited. Rural areas that become supply chain hubs may benefit, but it may often occur at the expense of those other rural farming communities that do not or cannot attract a supply chain hub to their regions.

Agriculture and Community. Some research has suggested that farm scale and other management characteristics are associated with certain community characteristics. This research has been controversial since Walter Goldschmidt's pioneering 1944 research on two California farming communities conducted for the USDA's Bureau of Agricultural Economics.²⁹ A substantial body of evidence has shown that communities characterized by large-scale, especially industrial, farm structures are often associated with adverse community socioeconomic conditions, e.g., lower community standards of living, less economic diversity, fewer community services, less vibrant retail trade, etc., than communities with other types of farming enterprises.³⁰ The direction of that statistical association, however, remains unclear as does the strength of the relationship and, even more important, the processes that underlie it. Moreover, for policy purposes, it would likely be very difficult to reliably predict the kind or degree of any positive community gains that might occur through policies to limit the growth of farm size. However, a variety of characteristics of local and regional agricultural production, as with any other industrial sector, are likely to interact in different ways with the wider rural economy and to be broadly associated with the overall quality of rural life.

Research conducted as part of the Office of Technology Assessment's (OTA) 1986 report, *Technology, Public Policy, and the Changing Structure of American Agriculture* supported the relationship reported by Goldschmidt between industrial farming and community quality of life in its analysis of Florida and several Western states.³¹ Research in other regions, however, has cast doubt that the relations that Goldschmidt and others documented are generalizable to all regions, especially regions that do not have a history of industrial farming. In the South, for example, both large-scale and small-scale farms were associated with relatively low standards of living while mid-size farms were associated with higher standards of living. But even here, scale may well not be the most influential variable on community characteristics. Southern communities where small-scale tobacco farming is an important economic activity, for example, have tended to benefit from federal tobacco

²⁸(...continued)

Pp. 247-267, in Emery Castle (ed.), *The Changing American Countryside: Rural People and Places*, Lawrence, KS: University of Kansas Press, 1995.

²⁹Walter F. Goldschmidt. *As You Sow: Three Studies in the Social Consequences of Agribusiness*. Montclair, NJ: Allanheld, Osmun and Co., 1978.

³⁰Counties with the most industrialized agriculture are found in California, Arizona, Texas, and Florida. Of these, California and Texas are among the top 10 states with the most agricultural workers.

³¹MacCannell, Dean and Edward Dolber-Smith. "Report on the Structure of Agriculture and Impacts of New Technologies on Rural Communities in Arizona, California, Florida, and Texas." Report prepared for the U.S. Office of Technology Assessment, 1985.

program support while areas once dominated by sharecropping, another small-scale production system, are among the poorest rural areas in the U.S.

While rural areas surrounding some industrial farms dominated by manager-worker relations and dependent on large, mostly unskilled labor forces can be associated with adverse socioeconomic effects,³² large-scale, owner-operated farms generally show positive effects. This is especially true in the Midwest. A survey of 9000 U.S. pork producers showed that in the total of 1530 pork farmers who returned their surveys, large producers paid the highest wages to workers, had more generous benefits, and better working conditions than small pork firms.³³ As these observations might suggest, any association between farm organization and various community characteristics appears to be mediated by the size and economic diversity of the community, the region, the kinds of agricultural commodities produced, and a rural area's proximity to urban-suburban areas.

Although research on the effects of supply chains and vertical integration on rural communities is at an early stage, the geographic concentration of production may be one important outcome affecting rural communities over time. To compete, innovations in alternative production models may hold some promise for agricultural-led development. For example, rather than the standard economic efficiency model of maximum yield per unit of input, farming operations that maximize optimal energy efficiency per unit of input or maximum nutritional efficiency per unit of input, or minimal environmental impact per unit of input, may have attractions to some farmers and consumers, especially those in areas near metro regions.

Equally important, however, the social organization of the local and regional non-farm economy also exerts important effects on the surrounding area suggesting that newly created opportunities in the non-farm economy may have significant impact on the farm economy and the rural economy more generally. As supply chains and other forms of vertical integration and coordination come to characterize various production sectors, the kinds and degree of local and regional impact may vary considerably depending on the broader characteristics of the regional economy and on the existence of local capacities for generating innovative alternatives or complements to these forms of production.

Agricultural Production and the Natural Environment. Agriculture affects a wide range of natural resources. To take but one significant case, modern agriculture fundamentally transformed the landscape and ecology of the Great Plains over the past 125 years, converting virtually all of the native tall-grass prairie into intensive crop production (see Box 3). Agriculture continues to produce a number of environmental effects on natural resources, some of which may also provide environmental amenities for alternative economic purposes, e.g., water quality and recreational activities. As urban and suburban development continues to push into

³² California has more farm workers than any other state. The Central Valley of California, the richest agricultural area in the world, however, has an unemployment rate three times the national average (New York Times, June 18, 2001, A1, A14).

³³Hurley, T., J. Kliebenstein, and P. Orazem. "The structure of wages and benefits in the U.S. pork industry." *American Journal of Agricultural Economics* 81, 1997.

rural farmland and as the structure of agriculture evolves, environmental aspects of agriculture are also becoming more visible to and, in some cases, less acceptable to non-farming interests than in the past. Large livestock feeding operations continue to be resisted by some farming communities.

Soil erosion and aquifer depletion are long standing concerns of both farm and non-farm groups. Sediment and nitrogen runoff from crop fertilizers continue to create surface water quality issues in many states as does the manure runoff from livestock operations. The Gulf of Mexico's oxygen-depleted zone may be one of the most visible national water quality concerns stemming from agriculture.³⁴ Many scientists and non-scientists also believe a variety of environmental issues attend the widespread use of pesticides and herbicides used in most farming operations. Loss of wildlife habitat and, until federally regulated, draining and filling wetlands accompanied large-scale, fence row-to-fence row, monoculture production.

Box 3: New Plans for the Great Plains Region

In the 1930s, the federal government strung together a set of public grasslands across Nebraska, Wyoming, and North and South Dakota and then rented the grazing rights to ranchers at rates that, today, are less than 15% of the price ranchers might pay on private lands. The Forest Service has recently released the Northern Great Plains Management Plan which, if implemented, will create a new approach to overseeing the region's eight National Grasslands and two National Forests. Environmentalists and federal biologists have complained that the existing grazing arrangement has led to overgrazing and extensive damage to wildlife habitat and water resources. Under the new management plan, ranchers could see their grazing privileges reduced by 10% or more. The plan also calls for increasing the population of prairie dogs which state and federal governments have spent millions attempting to eradicate over the past century. Ranchers in the region have vowed to challenge the plan in court. (Source: Paul Thacker, "A New Wind Sweeps the Plains." *Science*, 292, June 29, 2001: 2427.

More recently, the scale of some farming and commodity processing operations, especially those in cattle feeding, poultry, and swine production, has further raised the profile of large-scale, industrial agriculture's environmental impacts. While larger facilities may offer certain production efficiencies, they can also increase the concentration of environmental problems, sometimes to the point where they produce significant costs that must be dealt with. The rapid growth and concentration of confined-animal feeding operations (CAFOs), for example, have raised concerns about the impact on water pollution, flies, dead animal disposal, and offensive odors.³⁵ In North Carolina, where swine CAFOs are becoming a major part of the rural agricultural economy, the environmental impact of such operations may also have unequal social effects on rural residents and communities. While providing jobs in

³⁴Some scientists and fertilizer industry leaders have argued that no conclusive data exist identifying the sources of nitrate and nitrogen that enters the Mississippi River and, from there, into the Gulf of Mexico. See "Hypoxia, fertilizer, and the Gulf of Mexico." Letters, *Science*, 292, 25 May 2001: 1485.

³⁵See Copeland, Claudia and Jeffrey Zinn. *Animal Waste Management and the Environment: Background for Current Issues*. CRS Report 98-451 ENR, April, 1999.

relatively poor areas, a recent study of the environmental impact of swine CAFOs, for example, revealed that such operations were five times (controlled for population density) more likely to be located in poor, nonwhite communities.³⁶ In addition, most swine CAFOs, which use waste “lagoons” that can contaminate ground water, are located predominantly in areas heavily dependent on well-water.

While some of these environmental concerns may not be necessarily new, widespread information and increasing opposition to what many perceive as unacceptable environmental impacts have made environmental factors increasingly important aspects of agricultural production decisions. With rural areas now more closely integrated with suburban and urban systems, environmental aspects of agricultural production may be perceived by some as intrusive and highly objectionable. Individuals and communities have responded not only to environmental problems stemming from existing agricultural operations, but they are also resisting potential future problems. Over the past two decades, several voluntary programs addressing the environmental effects of agricultural production have been implemented at the federal level. These programs, e.g., the Conservation Reserve Program, the Wetlands Reserve Program, and Environmental Quality Incentives Program, have played a significant role in reducing soil erosion, protecting and restoring wetlands, and creating wildlife habitat.³⁷ However, these programs do not take into consideration location or urbanization in deciding where they should be applied.

Significant environmental problems occur in most regions, although their scope and severity are dispersed unevenly across the rural landscape. While much of agriculture often is exempt from certain environmental regulations affecting other industries, agriculture is subject to federal regulation under the Food Quality Protection Act of 1996, the Clean Water Act, the Endangered Species Act, and specific regulations under the Occupational Safety and Health Administration pertaining to farm workers. The Clean Water Act also authorizes states to control water pollution from CAFOs through a permitting process that requires certain technologies or adherence to particular standards. Some problems, such as odor, are not federal concerns. Regulatory oversight of agriculture’s environmental impact could increase in the future, especially given the strong and widespread public support for environmental policies.

New environmental regulations could add further costs to certain kinds of agricultural production and lead to searches for innovative ways to meet the regulations. Large, well-managed enterprises may be better able to meet new environmental regulations targeting agriculture. Small farms, and those working on very thin profit margins, could find any new environmental regulation particularly onerous if they imposed production costs that made the enterprises no longer economically viable. Depending on the region, costs to farmers for environmentally

³⁶Steve Wing, D. Cole, and G. Grant. “*Environmental injustice in North Carolina’s hog industry.*” *Environmental Health Perspectives*, 108(3): March 2000.

³⁷For a review of federal programs in and spending for environmental and agricultural issues, see Zinn, Jeffrey. *Conservation spending in agriculture: trends and implications.* CRS Report RL 30331, October, 1999.

sound practices can be significant and they may also produce few clear economic benefits to the farmer relative to these costs. The benefits of these conservation practices, for example, often disproportionately benefit non-farmers, primarily through improvements to environmental quality. Public policies that would provide flexible assistance to help farmers and ranchers respond to environmental concerns on productive land (e.g., “green payments”) may help many farmers create environmentally sounder management practices and could offer development opportunities for local and regional innovations in environmental service industries.

In some industries, (e.g., automobile design and manufacturing, oil drilling), federal regulation has spurred technical innovations. In agriculture, soil conservation policies played an important role in promoting research on conservation tillage techniques; and to reduce pesticide use, integrated pest management techniques have been successful in some areas. More recently, integrated crop management practices, a form of production that focuses on the entire farming operation as a system rather than simply targeting particular inputs to particular pests, has shown promise in some areas. Further research into these and other practices, while representing only a small part of contemporary production, may offer future possibilities for enhancing productivity and reducing the costs on small and/or marginal farming enterprises and, thereby, increasing their chance of survival.

Agriculture may also provide the important local and regional environmental amenities of open space and wildlife habitat, groundwater recharge, and wetlands, as well as marketed agricultural products. Small farms in rural New England, for example, are important to that region’s strong tourism industry as well as to agriculture and dairy production. “*Grown in Vermont*,” “*New Hampshire Apples*” and “*Maine Blueberries*,” play a role in regional food retailing (often at premium prices) catering to visitors and local residents alike.³⁸ The agro-environmental landscape that produces these agricultural commodities may, in some ways, be as valuable to local rural economies as the actual agriculture commodity, and may be developed to provide alternative economic opportunities.³⁹ California’s Napa Valley, a global wine production center, is also a major tourist region where visitors come, in part, to view a landscape of commercial agricultural cultivation. While not all rural areas have such “branded geographies,” agricultural landscapes may often provide significant natural and cultural amenities that traditional markets find difficult in valuing under existing economic models. Recent research into new methods of

³⁸See Hinrichs, Clare C. “*Consuming images: making and marketing Vermont as a distinctive rural place.*” Pp. 259-278 in Melanie DuPuis and Peter Vandergeest (eds.), *Creating the Countryside: The Politics of Rural and Environmental Discourse*. Philadelphia: Temple University Press, 1996.

³⁹This concept of agriculture’s “multifunctionality” is an important policy position in the EU and Japan. These countries have used OECD and WTO venues to argue that preserving landscape amenities is sufficient reason that these subsidies should not be seen as violations of agriculture trade agreements. The U.S. and other countries have refuted this position insofar as trade is concerned. Recent Congressional debate over reauthorizing the Northeast Interstate Dairy Compact, however, seemed to recognize the importance of the small farm in the New England landscape as part of the rationale for continuing the Compact.

valuation for rural amenities may become increasingly important to future agricultural and rural development policies.⁴⁰

Suburban development can impose environmental costs on rural and agricultural lands, for example, through poorly constructed septic systems that often accompany rapid housing development in rural areas with little zoning regulation. To some observers, the loss of agricultural land to suburban development is, itself, a significant environmental cost.⁴¹ Low-density farming operations lying on the edge of the urban fringe are particularly vulnerable to conversion. Farmland owners, especially those at the urban fringe, often make land use decisions under pressures of suburban expansion. As land values increase in rural areas adjacent to metro areas, farmers that want that option can be tempted to cash out. While 82% of all farmland is located in rural areas, data from the 1997 Census of Agriculture indicated that a third of all farms are located within metro areas and that these farms controlled 39% of farm assets. Most metro farmers operate small-scale enterprises and earn most of their income from off-farm sources; a smaller group is focused on high-value production mostly in fresh fruits and vegetables. According to USDA's National Agricultural Statistics Service, the average per acre value of "urban-influenced" farmland is nearly three times higher than "non-urban-influenced" farmland.

State and local land use policies are the primary means of preserving rural amenities. Citizens across the U.S. have long supported state and local initiatives to retain private land as "open space." All states have some form of tax preference or other means of valuing the use of farmland. At the federal level, the 1981 Farmland Protection Policy Act required that federal agencies conduct reviews to minimize the extent to which their programs contributed to the irreversible loss of farmland to non-agricultural uses. The 1990 farm bill (P.L. 101-624) created the Farms for the Future program, a pilot program that offered federal loan support to state and local governments to purchase conservation easements on farmland. The 1996 farm bill (P.L. 104-124) superseded the Farms for the Future program and directed USDA to purchase agricultural conservation easements on "prime and unique" farmland to protect it from non-agricultural use.

Negative environmental aspects of agriculture can lead to significant conflict with non-farm interests as "right-to-farm" legislation revealed. This state legislation stemmed largely from the conflict between non-farm residential development into areas where farms, often large farming operations, predominated.⁴² Farmland

⁴⁰A recent conference hosted by USDA focused on the contribution that natural and cultural amenities make to the development of rural areas. See *Valuing Rural Amenities*. Paris, OECD, 2000.

⁴¹According to the American Farmland Trust, agricultural lands are converted at a rate of approximately 1.5 million acres per year in the U.S.

⁴²Many states passed such legislation as a defense against nuisance lawsuits that arose when non-farm land uses extended into agricultural areas. Most right-to-farm laws adopted a "coming to the nuisance" doctrine to protect farming operations, i.e., an individual chose to move to an area where an objectionable environmental condition existed. Depending on how particular laws were drafted, prospects of legal challenge varied. In a decision in 1999, for

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preservation, however, can also be compatible with urban-suburban development. For metro-agriculture particularly, policies that protect farmland provide one way to preserve a viable local agriculture. A local government can purchase the development rights from a landowner (voluntarily) and forever keep the land designated as farmland; or the landowners can sell the development rights to developers which permits the latter to build on other lands at higher densities than may be allowed by current zoning. While development pressures on farmland can be intense at the urban fringe, the non-farming public has been generally supportive of public efforts to protect farmland. With such strong public backing, public policies that encourage and support sound environmental practices on the farm may play a significant role in improving agriculture's environmental record, in retaining viable urban-fringe agriculture, in conserving open space, and in minimizing land use conflicts.

Alternative Production Systems and Changing Food Consumption Patterns.⁴³ Changing consumer demand patterns are becoming important factors shaping the social organization of agricultural production, especially in Europe, the United States, and Japan. Food safety issues have become a major vehicle that critics of conventional agricultural practices use to inform the public about the global organization of the food and fiber system, especially the food systems of the developed industrial economies. For example, widely disseminated reporting on and policy responses in Europe to bovine encephalopathy (“mad cow” disease), foot-and-mouth disease, and poultry feed contamination, have reinforced concern in some consumers’ minds that conventional production methods in agriculture can be threatening to human health. Continuing consumer uneasiness with genetically engineered commodities in many processed food products and increasing knowledge and concern about the environmental costs of industrial agriculture have led some consumers to seek food products they believe are superior to foods grown and raised under conventional production methods. Such trends point to the extent to which agro-food markets are becoming increasingly segmented and may offer new opportunities to meet these new consumption demands .

Higher incomes and increasing urbanization are significant factors leading to demand for higher quality food, for food produced in certain ways, and for labor-saving products.⁴⁴ Most purchasers of organic foods and animal products (e.g., eggs, meat, and dairy) from creatures grown under “free-range” systems and slaughtered under what many consumers believe to be more humane methods tend to be well-

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example, the Iowa Supreme Court held in *Bormann v. Board of Supervisors* that such laws constituted a “takings” under the Fifth Amendment.

⁴³Data for this section draws on two reports: Lohr, Luanne, “*Factors affecting international demand and trade in organic food products*,” and Mitchell, Lorraine. “*Impact of consumer demand for animal welfare on global trade*” in Anita Regini (ed.) *Changing Structure of Global Food Consumption and Trade*. WRS-01-1, USDA, Economic Research Service, May, 2001

⁴⁴Interest in organic products extends to industrial crops as well. For example, consumers seem willing to pay a significant premium for organic fibers in apparel. See Nimon, Wesley and John Beghin. “*Are ecol-labels valuable? Evidence from the apparel industry.*” *American Journal of Agricultural Economics* 81(4), 1999,

educated, urban, and high-income earners. Heightened awareness of safety and health concerns have also changed U.S. food consumption patterns over the past 20 years. For example, the share of red meat consumption in total meat consumption in the diet declined from 79% to 62 % between 1979 and 1999 while the share of poultry consumption rose from 21% to 38% over the same period. Per capita fruit and vegetable consumption increased by 25% from 1979-1999. Facilitated by changes in shipping technology, trade in horticulture and high-value produce also has grown.

Wealthier countries, whose citizens have more information about food risks, tend to demand higher food safety standards. In 1996, for example, Congress enacted the Food Quality Protection Act (FQPA) to overhaul the standard setting process for pesticides. The FQPA, among other provisions, targeted children for pesticide protection and required more pesticide information on food products. Those with higher incomes are often also willing to pay more for perceived higher safety levels. For example, they are willing to pay for foods grown in particular ways, e.g., “organic,” “sustainable”, “low-input.” While growth in organic food is fairly well publicized, other labels attesting to how a food is raised are also beginning to appear. In th U.S., “eco-labeled” food such as food raised by Integrated Pest Management techniques, or “Low-Chem” in Japan, and “Green Foods” in China have created new food markets. In the U.S., taste, freshness, and quality are among the top reasons cited for organic purchases; in Japan, food safety is the primary reason consumers purchase organic foods. In the European Union, retailers advertise food safety and health aspects of organic food. Environmental protection in food production is also major argument presented by European retailers.

These trends, while currently small relative to the total value of global agricultural trade, may suggest more fundamental changes occurring in the global food system. They do not necessarily portend a trend back to traditional production methods. Modern organic agriculture production, for example, is quite technically sophisticated and relies heavily on scientifically developed inputs.⁴⁵ Similarly, free-range/hormone-free beef and pasture-raised poultry methods often require a knowledge-intensive system of grazing and rotation. Nevertheless, growth rates in organic markets have been quite large. Nearly 20-30% of consumers claim to purchase organic food regularly, accounting, in part, for the 15-30% growth rates in organic markets over the past 5 years in Europe, Japan, and the U.S. Continued growth may lower the 10-30% premiums over conventional that organic growers now receive, but they are likely to remain sufficiently attractive to those growers looking for economic advantages. Finally, changes in food consumption patterns are occurring parallel to and, arguably, are reinforced by increased awareness of the environmental impact of much industrial agricultural production and associated food safety concerns.⁴⁶

⁴⁵A significant portion of organically certified produce, e.g., carrots, celery, lettuce, is also raised by conventional growers who set aside some of their land for organic techniques as a high-value niche within their own predominantly conventional operations.

⁴⁶Researchers have observed substantial demand and willingness to pay a premium for foods grown in environmentally sound ways. See Blend, Jeffrey R. and Eileen O. van Ravenswaay. “*Measuring consumer demand for ecolabeled apples.*” *American Journal of Agricultural* (continued...)

U.S. growers and ranchers are eager to develop new global markets. Exchange of organic products internationally is also rapidly increasing. Recent establishment of national standards for organic production in the U.S. and Japan compatible with EU standards is likely to boost organic trade among these three trading blocs. Demand is growing in Japan for goods such as fresh produce, frozen foods, baked goods, and prepared meals, among other consumer goods. The organic ingredients market is also expanding for pickles, fresh fruits and sweeteners for jams, oils and semi-finished produce. These may represent new opportunities of growth for both large and smaller-scale U.S. producers who can develop innovations in organic production, processing, and branded marketing.⁴⁷

Summary. Change in the structure of agricultural production and environmental concerns are changing *how* agro-food commodities are produced, *where* these agro-food commodities are produced, and *who* is producing them. The broad overview of some contemporary trends shaping agricultural production presented above may be briefly summarized:

- Under current conditions, the trend toward fewer, larger, more highly capitalized, and specialized farming operations is unlikely to be reversed.
- Supply-chains represent a significant structural dimension of increasing scale and integration and suggest that marketing and production contracting will become an important organizational factor in conventional agricultural production.
- Supply-chain expansion may further reduce the number of farms as well as, perhaps, geographically concentrate certain kinds of production, e.g., livestock production, speciality grains, and fruits and vegetables.
- Conventional agriculture is likely to remain a significant if diminished part of the rural economy if present conditions continue and deepen. Farm dependent counties, especially those that produce mostly bulk commodities, will face greater competitive pressures from a globalizing agro-food system.
- The diversity of farm household income strategies as well as the diversity of local and regional rural economies are important variables in assessing the relation between agricultural policy and rural development policies.
- Environmental concerns about current trends in agricultural production are likely to increase, especially in those rural areas at the urban-suburban fringe. Although potentially affecting the organization of current production, such concerns could also propel producers toward new opportunities for agro-environmental innovations.
- Changing food consumption patterns may become an important source of innovation in alternative agricultural production systems.

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⁴⁷For information on U.S. organic food regulation, see Rawson, Jean. *Organic foods and the USDA national organic program*. CRS Report RS20799, January, 2001.

An Overview of Contemporary Rural America

Rural America has long been an indirect target of public policy. In the past 30 years, federal legislation has directly targeted rural development issues. What has changed over time is perhaps less the general policy concern with rural America than rural communities to which traditional policies are directed. The absence of coherent rural policies to meet changing conditions could have important implications. The proportion of the national population living in rural areas (20%) has been remarkably stable over the past 120 years. Yet, rural conditions have changed dramatically over that time. Rural policies for the 21st Century are confronting a highly diverse rural America, one that is home to traditional economic activities of farming, mining, fishing, and timbering, but also a rural America that is more socially and economically diverse and one with complex ties to metropolitan areas and to a global system that steadily shrinks time and space.

Rural Population Characteristics. Approximately 55 million persons reside in non-metropolitan areas in 2001, nearly 20% of the U.S. population. After years of little or no growth in population, rural and small towns grew faster than suburban and urban areas in the 1970s. In the 1980s, however, this trend reversed during the general recession and farm crisis, and the number of retirees moving to rural areas declined. A shift occurred again during the 1990s when most non-metro counties either increased their growth rates, shifted from a 1980s loss or gain, or, continued a decline, although at a somewhat reduced rate. Population growth was highest in the Mountain West and lowest or non-existent in the Great Plains, Mississippi Delta, and Corn Belt. Non-metro counties adjoining metro areas accounted for almost two-thirds of all non-metro growth, increasing about 12% on average. Much of this growth stemmed from metro residents relocating to the adjoining non-metro areas and from other sources of immigration. Despite this net inflow of people from metro areas, the rate of net migration into rural areas, which had steadily increased during the early and mid-1990s, dropped to one-half of 1% during 1997-1999. This more recent decrease in rural net migration has also occurred among college graduates. Because many low-growth farming areas also lack the attraction of natural amenities such as those found in the Mountain West or Florida, they are unlikely to experience future population growth without new sources of employment.

Geographic patterns of population growth during the 1990s also reveal important changes that could affect agricultural production and rural life in coming decades. About three-fourths of the approximately 13% national population growth between 1990 and 2000 occurred in the South and the West. In a recent *New York Times* analysis of the 2000 Census based on census tracts, demographers measured rural, suburban, and urban categories by persons-per-square-mile.⁴⁸ Overall, the U.S. is about 15% more urban today than it was in 1990, a reduction in the nearly 21% suburban growth from 1979-1980. The declining growth in rural populations relative to urban populations that began in the mid-1990s following a period of expansion in the early 1990s, resulted, in part, from growing urban centers that had

⁴⁸Suburban was defined as 320-3200 persons per square mile; rural was defined as less than 320 per square mile; and urban more than 3200 per square mile. See Firestone, David. *The New-look suburbs: Denser or more far-flung*. *New York Times*, April 17, 2001: A1, A14.

lost population in previous decades, e.g., Atlanta, Chicago, Denver, Boston. By 1997-1999, the non-metro population growth rate was little more than half of the metro rate.

This 21st Century “urban renaissance” is occurring alongside the continuing development of the rural landscape. More than 17,000 square miles of rural land reached suburban or urban densities during the 1990s, a land area larger than the states of Rhode Island, Connecticut, Delaware, and New Hampshire combined. Over 1.5 million acres per year of that land were developed farmlands. Most of the rural loss was in the South which is also evincing a spatial form of suburban development much different from other parts of the U.S. In the South, suburban developments are occurring in areas much farther from cities than ever before and they are occurring in some cases as chains of medium-density areas hundreds of miles long following major Southern transportation corridors. One Georgia county (Habersham County), about 2 hours from Atlanta and considered entirely rural in 1990, began achieving suburban densities with the arrival of over 7,800 people, a 28% increase over the decade. Many of the county’s newcomers were Hispanic workers attracted to jobs in the county’s expanding poultry processing plants.

During the 1990s, population remained stable or grew in those rural areas and small communities that were able to attract jobs in service-oriented development, the major source of employment growth in metro economies. Farm-dependent counties generally saw no growth or lost population in the 1990s. Immigration was the major source of growth in the U.S. population; and suburbanization was the dominant spatial model, a model somewhat different from the suburbanization of the past 50 years. While about 75% of all residents and nearly 90% of immigrants live in urban areas, the immigration into rural and agricultural areas may be more socially significant than these broad data might suggest.

Immigration is extremely important to farming, meatpacking, and textiles; and immigrant professionals, e.g., physicians, also play an increasingly important role in many rural areas. Much of labor intensive agriculture is located in geographically large western counties classified by the census as metropolitan areas. Crop production, fruit and vegetable farming, and meat packing industries are heavily reliant on farm workers.⁴⁹ The dominant group of immigrants are Latinos or Hispanics from diverse regions of South and Central America. These immigrants accounted for nearly 20% of the national non-metro growth. Some are new immigrants from central Mexico and non-Spanish speaking Indians of southern Mexico and Guatemala. In the Upper Midwest, Mexicans and Mexican-Americans from the Rio Grande River Valley along with a few middle-class Cubans and Puerto Ricans and other Latin Americans also reside. The majority of Latino or Hispanic immigrants into the Upper Midwest arrived to work in the region’s new and expanding swine and turkey processing plants. In the Lower Midwest, immigrants took jobs in the meat packing plants.

⁴⁹See Levine, Linda. “*Farm labor shortages and immigration policy*. CRS Report RL30395, June, 2001.

Rural Economic Characteristics. As with other industries, agriculture confronts ever more competitive pressures to cut unit production costs. The Bureau of Labor Statistics projects a 13% decline in farmers and farm managers between 1998 and 2008, the largest projected decline in any occupational category.⁵⁰ Employment in agricultural inputs, processing, marketing, retail and wholesale sectors is projected to grow only minimally. Non-farm employment, on the other hand, is projected to grow 14% between 1998 and 2008 with the service sector providing practically all the job growth, e.g., personal, business, and health services, communications, finance, insurance and real estate, and transportation. Most of the growth seen in the agricultural related sector over the past 20 years has been in the service-oriented food retail and wholesale activities.

Rural policy focuses primarily on the agricultural and manufacturing sectors. Technological efficiencies in agriculture played a significant role in reducing employment opportunities in agriculture over the past 100 years; manufacturing was seen as the most promising source of replacement employment. Beginning in the 1950s, rural planners and policy makers identified the location or relocation of urban manufacturing plants and branch plants as primary sources of new rural employment. While this economic development trajectory had important effects on rural incomes in those areas fortunate enough to attract plant relocation, the winners often simply displaced other needy communities similarly vying for plants.⁵¹ “Smoke-stack” chasing development policies undergirded by infrastructure development, tax holidays and rebates, and public subsidy of business relocation costs have, in many cases simply moved jobs to new communities without necessarily increasing net employment. Branch plants, for example, are rarely technologically innovative and are unlikely to be significant generators of new jobs or higher paying jobs. By the 1980s, many of these manufacturing plants were in economic trouble. The cost advantages of low-wage rural U.S. workers began to decline with growth in international manufacturing coupled with a strong U.S. dollar. The lower labor costs found in rural areas in the 1970s began to shift to new manufacturing sites in Southeast Asia, China, Mexico, and the Caribbean in the 1980s where labor was even less costly (See Box 4).⁵² Even when rural manufacturing began to grow somewhat in the late 1980s, job levels were still far below those of the 1960s.

Rural earnings growth continues a national trend of rising real earnings in both metro and non-metro labor markets. The rise in women’s earnings is the primary component of rural labor market increases from 1990-1997. Real weekly average earnings in 1997 dollars for women rose 8.5% while men’s real weekly earnings rose

⁵⁰Thomson, Allison. “*Industry Output and Employment Projections to 2008*,” *Monthly Labor Review*, November 1999, pp. 33-50.

⁵¹The development of the small-scale steel mill, for example, meant that steel production could relocate to small rural areas with cheap electricity rather than to coal mining communities, just as the latter were beginning to suffer significant job losses.

⁵²Labor costs may not explain all the reasons for manufacturing losses in rural areas. Case evidence has suggested that economic and political powerlessness and managerial competency deficits may also be causes of rural manufacturing decline. See Knapp, Tim. *Rust in the wheatbelt: the social impacts of industrial decline in a rural Kansas community.* *Sociological Inquiry*, 65(1)Winter, 1995:27-67.

by less than 1%.⁵³ Despite the strength of the economic expansion during the 1990s, however, over 25% of rural wage and salary workers earned full-time-equivalent wages below the poverty level for a family of four in 1999 (\$17,000).

Since the early 1990s, rural earnings growth generally has outpaced urban earnings, due, in part, to the sluggish recovery from the early 1990s recession in urban areas. Earnings among the lowest paid rural workers have risen more slowly than for the rest of the labor force even as their education levels have increased. Current low-wage employment rates in rural areas remain higher than in the late 1970s despite a better educated workforce and a very low national unemployment rate. This may suggest that public policies attending primarily to human capital issues in at least some rural areas may not be effective in and of themselves. Although most low-wage workers are women, men's share of low-wage work in rural areas has risen over the past 20 years. Despite an increase in job growth in late 1998, the pace of employment growth in rural areas slowed from an average of 1.8% between 1990 and 1995 to about 1.5% in 1999.

Box 4: North Carolina Manufacturing

In 1993, North Carolina ranked first (followed by Mississippi) in the percentage of workers in manufacturing jobs, 25.7%. Seven years later it had dropped to sixth place with 19.6% of the state's workers in manufacturing jobs. In the last five years alone, North Carolina lost nearly 58,000 of those manufacturing jobs and the factories that produced them to overseas factories. Over 60% of these jobs were in North Carolina's non-metro areas. By early 2001, fewer than half of the 400,000 textile and apparel jobs that dominated North Carolina employment in the 1980s remained. While the state's economy was able to create nearly 700,000 service sector jobs, the new employment sectors (e.g., finance, technology) in the booming metro areas of Charlotte and Raleigh-Durham are not able to absorb all these losses, especially as the national economy has slowed. Many of these rural workers who lose manufacturing jobs often lack the education and training to compete for new service sector jobs; and their rural counties often lack the resources to attract new sources of higher-wage employment. (Source: David Firestone, "A Chief Exporter, and Not at All Pleased About It" New York Times, February 23, 2001: A11

In 1997, rural areas lagged behind urban areas by at least \$9,000 in real per capita income. This gap has widened since the late 1980s, exacerbated by the loss of manufacturing jobs. Earnings per job also remain consistently and substantially lower in rural areas than in urban areas (\$35,151 versus \$23,619 in 1998 dollars). In part, lower rural earnings may reflect the lower college graduation rates of rural workers even though high-school completion rates have come close to matching those of urban areas. In addition, the types of manufacturing operations that relocated to rural areas were predominantly non-union and required lower-skilled workers than other manufacturing jobs, e.g., assembly, warehouse shipping.⁵⁴ The fact that rural

⁵³USDA's Economic Research Service calculations from the Current Population Survey data, 1997.

⁵⁴Local officials and business elites eager to promote a "pro-business" environment can also be very influential in determining the types of employers that locate to rural areas. In North Carolina, a high-wage, unionized United Airlines maintenance facility was successfully

(continued...)

areas have also seen growth in particularly vulnerable populations, e.g., minorities and single female headed households, may partly explain the metro/non-metro gap in real earnings per job, although by a substantial margin, most rural poor are not minorities,

Rural Poverty. The poverty rate for rural areas in 1999 was higher than that of urban areas (14.3% versus 11.2%). The changing location of economic activities within the U.S. and across international borders, technological changes, and real minimum wage rates have been especially hard on those rural areas where large clusters of low-wage workers reside. Over 500 rural counties (23%) are defined by the 1997 Census of Agriculture as being in “persistent poverty.” These counties had 20% or more of their populations at or below the poverty level for each of four census years (1960-1990). Most of these persistently poor counties are in the Southeast and Delta regions, Native American reservations, core Appalachia, and the lower Rio Grande Valley. Agriculture is often a significant economic sector in these regions, but as with national trends, its role has declined. A large pool of poorly educated residents, high proportions of minorities, and mostly low-wage manufacturing and part-time service employment in persistently poor counties help explain why these areas have found it difficult to improve household incomes.

High unemployment, poorly educated workers, substandard housing, and inadequate public infrastructure characterize persistent poverty counties where, in addition, the majority of limited-resource and minority farmers also reside. Many poor rural areas have low-wage employment opportunities, long distances to services and jobs and lower automobile access, little public transportation, and lack of child care options.⁵⁵ Persistently low per capita incomes often translate into low levels of human capital investment. With little growth in rural high-skill employment and downward pressure on wages in low-skilled employment, many persistent-poverty counties, especially in the South, are very badly positioned to reverse these trends.⁵⁶ Some observers have also concluded that rural poverty in certain states, e.g., California, is actually being re-created through immigration, driven, in part, by the expansion of low-wage, immigrant intensive agriculture.⁵⁷

It must be emphasized that the rural experience is highly variable from county to county and from region to region.⁵⁸ Highly aggregated socioeconomic indicators

⁵⁴(...continued)

prevented from locating to that state in the mid-1990s.

⁵⁵Informal work, i.e., unrecorded labor, is often an important source of income in rural areas. Welfare reform legislation’s work mandates do not recognize work in the informal sector. Thus, rural residents in very poor areas are doubly burdened by the loss of welfare support without necessarily being able to replace their lost income through employment in the formal sector.

⁵⁶Nord, Mark. “*Overcoming persistent poverty – and sinking into it: income trends in persistent poverty and other high poverty rural counties, 1989-1994.*” *Rural Development Perspectives*, 12(3), 1997:2-10.

⁵⁷Taylor, J. Edward, Philip Martin, and Michael Fix. *Poverty Amid Prosperity: Immigration and the Changing Face of Rural California*. Urban Institute, Washington, DC, 1997.

⁵⁸It should be noted that in 1960 there were over 2000 rural counties (out of about 3300 total)
(continued...)

can often be misleading. Average job growth, unemployment rates, and earnings in many rural areas adjacent to metro areas are often as high as those within metro areas. But this is due in part to the fact that many of the jobs in adjacent non-metro areas within commuting distance to urban areas are service related, especially business services, or high-skilled manufacturing employment, jobs which pay higher wages on average. Other rural areas, e.g. Native American reservations, may have unemployment rates of up to 75% although average metro and non-metro unemployment rates are similar (4.3% vs. 4.6% respectively in 2001).⁵⁹ Rural communities that captured some of the spillover of urban affluence did well in the 1990s and may be able to maintain that advantage if they increase the proportion of their high-wage service sector employment. For many other rural communities, however, especially those remote from urban areas, lacking amenities, with a high proportion of poorly educated working-age residents, the 1990s offered little change in fortunes, and future prospects remain unattractive in many circumstances unless there are significant changes in local and regional institutions, infrastructure, and entrepreneurial capacity.⁶⁰

Farming Communities. In 1997 there were 316 farming-dependent counties (20% or more of total labor and proprietors' income derived from farming) and 312 farming-important counties (10%-19.9% of income from farming). The more dependent a county was on farming in 1997, the larger the decline in the number of farms and the increase in sales per farm. In other words, the growth in fewer and larger farms was greater in farm-dependent and farm-important counties than in other rural communities less reliant on agriculture. Farming-dependent counties lost an average of 12,500 farms between 1987 and 1997; farming-important counties lost 10,600 farms over that period. Other non-metro counties lost 6,700 farms between 1987-1997. The average 1997 sales per farm in farming dependent and farming important counties, however, was \$233,900 and \$161,200 respectively compared to \$69,200 for all other non-metro counties.

Farming-dependent counties are concentrated primarily in the Great Plains, Western Corn Belt, and parts of the Northwest and Southeast regions. These counties are also geographically isolated with very low population densities (11.8 persons per square mile versus 36.3 persons for other non-metro counties). This can create barriers to new economic development, especially service related development. Very low densities and few large metropolitan regions within commuting distances increase the costs of infrastructure development, transportation, and other public services. Many rural areas are beginning to participate more in the service sector, but, as was the case with many manufacturing jobs, the service jobs rural areas are able to

⁵⁸(...continued)

with 20% or more of their populations in poverty. By 1990, this number had shrunk to 765. While some of this reduction can be explained by poor non-metro counties becoming poor metro counties, the nearly two-thirds reduction points to a genuinely remarkable change in rural poverty.

⁵⁹Rates are based on civilian, non-institutional populations, 16 years and older, 2nd Quarter, 2001. Bureau of Labor Statistics.

⁶⁰Duncan, Cynthia. *Worlds Apart: Why Poverty Persists in Rural America*. New Haven: Yale University Press, 1999.

attract are often lower-wage personal services rather than higher wage producer and professional services. Non-metro areas predominantly in the Midwestern and Southern states gained the most food manufacturing jobs in the 1990s, but only 357 counties out of a total of 2,310 non-metro counties gained 50 or more food processing jobs between 1990 and 1996. Most of the jobs were in meat and grain mill products. With their lag in creating new jobs, farm-dependent counties are also losing their younger and better educated residents, a potentially significant barrier to creating and sustaining new economic activities in the future. Again, aggregate statistics about sectoral shifts in rural employment can often be misleading without more detailed information on particular county and regional patterns of employment, job loss, income sources, etc.

Many farming-dependent and farm-important counties were characterized by continuing farm losses, low-wage job growth in the service sector and declining populations during the 1990s. Table 2 provides data on the structure of employment in these counties. Farming-dependent counties are concentrated in the Great Plains and Corn Belt, but, even here, non-farm employment accounted for over 80% of the jobs held. Earned income contributes about 62% of total personal income in farming dependent counties while the remainder comes from unearned sources such as dividends, interest, rents, and transfer payments. Farming in these counties contributes about 30% of earned income.

Table 2: Employment Characteristics of Farming Dependent Counties (1)

	Farming Dependent	Farming Important	Other Non-Metro
Number of Counties	316	312	1,662
Total Employment, 1997	1,347,000	2,328,000	24,359,000
%Total Goods Producing Employment (2)	37.2	35.9	29.5
%Total Farming Employment	18.3	12.0	5.3
%Total Manufacturing Employment	10.6	15.7	16.2
%Other Goods Producing Employment	8.4	8.2	7.9
% Total Service Employment	61.1	62.3	68.7
%Business Services Employment (3)	12.3	11.8	11.7
%Retail Trade Employment	14.0	15.5	17.6
%Government Employment	16.1	15.2	15.9
%Other Service Employment	18.7	19.8	23.5

%Employment Change, 1990-1997	11.3	13.6	14.1
%Change in Goods Producing Employment 1990-1997	4.4	6.4	3.7
%Change in Farming Employment, 1990-1997	-6.4	-6.8	-6.9
%Change in Manufacturing Employment, 1990-1997	12.4	14.5	4.4
%Change in Other Goods Producing Employment, 1990-1997	24.7	14.6	10.5
%Change in Service Employment, 1990-1997	13.9	16.8	17.7
%Change in Business Services Employment, 1990-1997	9.2	12.6	14.4
%Change in Retail Trade Employment, 1990-1997	20.1	20.4	21.2
%Change in Government Employment, 1990-1997	7.2	8.9	6.9
%Change in Other Service Employment, 1990-1997	19.0	23.7	25.2
Average Per Capita Income, 1997	\$19,413	\$18,489	\$19,131

Source: USDA-ERS calculations based on Bureau of Economic Analysis and Bureau of Census data (1)

(1) Percentages do not sum to 100 due to suppression

(2) Goods producing industries include farming, agricultural services, manufacturing, mining, and construction

(3) Business services includes transportation, public utilities, wholesale trade, finance, real estate, and insurance

While farm-dependent counties may lag behind other non-metro counties in creating jobs, their income levels compare more favorably to those in other non-metro counties. Average per capita incomes in farm dependent counties, although lower than average metro incomes, are somewhat higher on average than incomes in other non-metro counties. But inflation adjusted total personal income in farm-dependent counties grew only 13% between 1990-1998 compared with 21% in other non-metro counties.⁶¹ This suggests that the agricultural sector, while not a sufficient condition for rural well-being today, remains, nonetheless, an important factor in some local and regional rural economies. Government farm payments, moreover, may be more

⁶¹ Gale, Fred. "How important are farm payments to the rural economy?" *Agricultural Outlook*, October, 2000.

significant to farm-dependent economies than other non-metro areas because these payments tend to attenuate the impact of fluctuations in household incomes in areas more vulnerable to the volatility of the farm economy. Farm-dependent counties received, however, only 37% of farm program payments in 1998 while 19% went to metro counties and 44% went to non-farm dependent non-metro areas.⁶² In the absence of other economic opportunities, the loss of such payments to farm-dependent areas could hasten population loss and failure of farming related or other rural businesses. The extent to which these counties might also begin developing local and regional capacity to expand into innovative, value-added agricultural production, for example, or to create new employment opportunities outside agriculture is likely to become an important factor in improving socioeconomic circumstances in the future.

Summary. Given the diversity characterizing rural areas, any generalizations should be taken with caution. Distance to metro areas, local and regional economic mix, the presence of environmental amenities, the role of agriculture, and demographic characteristics can make vast differences in the socioeconomic profile of an area and any comparisons to other areas. Still, some broad patterns do emerge in 2001:

- Enormous diversity, sparse populations, and complex interdependencies with urban, suburban, and global geographies characterize rural areas.
- Rural America as a whole held its own economically fairly well in the 1990s, although many areas continue a slow decline.
- Rural counties dependent on farming continued to lose population and tend to gain, at best, lower-wage jobs. Farm household incomes, however, tended to be higher than non-farm households in farming-dependent counties.
- Non-metro population growth is tied to net immigration rather than natural increase, suggesting that social, economic, and environmental conditions in rural areas will strongly influence their future growth.
- While it is necessary to factor in the role of agriculture in rural and regional economies, current agricultural policy alone can no longer be equated with addressing rural policy issues more generally.
- Non-metro areas continue to lose population relative to metro areas, although remote rural areas are losing the most; non-metro areas adjacent to metro areas are likely to continue to grow and become part of metro areas.
- Rural areas have, on average, older, less-educated, and poorer residents than urban areas. Many farm dependent counties continue to lose college graduates.
- Non-metro areas, especially those where agriculture is a significant part of the local and regional economies and where environmental amenities are scarce are likely to face formidable problems if current trends in agricultural production, population growth, and employment persist.
- Rural America mirrors national declines in primary sectors such as agriculture and manufacturing and growth in service sector employment, although wages and real earnings per job in rural areas lag behind those of urban areas and the relative lack of economic diversity can make many rural areas vulnerable.

⁶²Ibid.

Public Policy and the Changing Opportunity Structure of Rural America

A wide range of rural problems such as low wages, declining jobs, lack of infrastructure, weak educational systems, concentrated poverty, and shrinking population has been addressed at the federal level, but only in piecemeal fashion. No comprehensive rural policy has ever existed in the United States, although limited regions have been targeted with a more coherent focus such as Appalachia through the Appalachian Regional Commission.⁶³ Evidence presented above suggests that rural policies based on agriculture support programs are even less likely than in the past to provide the single major policy focus around which decision makers might forge viable rural development policies for the future. The dominant thrust of U.S. agricultural policy and the policies increasingly necessary to build and strengthen rural communities coincide in general in only a few agriculture-dependent counties today. For over forty years, manufacturing has provided employment to replace lost farm jobs; but, for reasons discussed above, its potential as an engine of sustainable future growth and development also reveals significant limitations. The service sector will be important to rural areas, but here as well, the types of service sector jobs and related wage levels in rural areas can differ significantly from those of urban areas. While agriculture remains central to rural well-being in many regions, rural development in the future is likely to be driven more by changes in the global political economy, the structure of a global agro-food system itself, the social and economic diversity that rural communities and regions draw upon, the relations between rural, urban, suburban, and international geographies, and the particular demographics of local areas.

USDA Rural Development. Rural policy has been an expressly identified concern of Congress only since the 1972 Rural Development Act (P.L.92-419), although the Eisenhower Administration did create a Rural Development Program in 1955 aimed at low-income farmers. Legislation affecting rural areas, however, has been significant since the Nation's founding. At least 16 federal agencies target rural areas within their program missions, but the 1972 Rural Development Act designated USDA as the lead agency for coordinating federal programs that target rural areas; and the 1980 Rural Development Policy Act (P.L.96-355) directed the Secretary of Agriculture to prepare a comprehensive rural development strategy. Broadly speaking, that strategy over the past twenty years has emphasized categorical grants and loans for community and infrastructure development, business and government economic assistance, housing and credit assistance, and several other programs, including farm assistance programs. Reflecting nearly 10 years of emphasis on making more effective use of existing rural development funds and programs within a governing philosophy of a reduced federal role, the 1990 Rural Economic Development Act (Title XXIII of the Food, Agriculture, Conservation and Trade Act; P.L. 101-624), created the Rural Development Administration in USDA, established technical and managerial assistance programming, and redirected loans to support technology initiatives and a Rural Incubator Fund among other programs. Appendix A provides a selective chronological overview of major rural development legislation

⁶³Even here, Appalachian Regional Commission funding is focused on infrastructure development, particularly transportation..

from 1987-2001. The 2002 House farm bill (H.R.2646) passed by the House in July, 2001 emphasizes value-added agricultural businesses, telecommunications development, and strategic rural and regional development planning.

The mission of the rural development agencies within USDA is to “enhance the ability of rural communities to develop, to grow, and to improve the quality of life by targeting financial and technical resources in areas of greatest need through activities of greatest potential.” Four agencies in USDA are responsible for the mission area: the Rural Housing Service (RHS), the Rural Business-Cooperative Service (RBS), the Rural Utilities Service (RUS), and the Office of Community Development (OCD), which provides community development support through Rural Development’s field offices. The mission area also administers the rural portion of the Empowerment Zones and Enterprise Communities Initiative and the National Rural Development Partnership. Appendix B presents an overview of the funding objectives and targets of the major loan and grant programs supporting rural housing, business development, and infrastructure under the RUS, RBS, and RUS.

Title VII the 1996 Federal Agricultural Improvement and Reform Act (the FAIR Act), also referred to as the 1996 farm bill, P.L. 104-127) further devolved rural policy to State governments by streamlining some rural development efforts through the Rural Community Advancement Program (RCAP). The RCAP supports a Community Facilities program and consolidates funding for 12 rural development loan and grant programs administered by the RUS and RBS. RCAP was designed to provide greater flexibility in targeting financial assistance to local needs and permits a portion of the various accounts’ funds to be shifted from one funding stream to another. Appendix C provides programs and funding levels for RCAP from 1996-2002. Under the FAIR Act, Congress also created the Fund for Rural America and several loan and grant programs to enhance telecommunication technologies in rural areas.⁶⁴ The Fund for Rural America, a competitive grants program with two purposes – first rural infrastructure projects, and second, research with a rural emphasis – represented a significant change in federal funding in that the program was mandatory. The Fund, however, has not been fully funded by appropriators.

These various direct-assistance programs reflect, in part, the search for broad federal policies that are relevant to most rural communities most of the time and that make measurable improvements in the lives of rural citizens and communities. It would be difficult to minimize the importance of providing safe drinking water and solid waste management facilities where there are none, or decent, affordable housing, or the establishment of a fire department and an accessible health clinic. In that sense, rural development can take the form of responding to the program goals of categorical grants and loans perhaps at the expense of responding primarily to the diversity of specific community needs as local communities might define them. This may help explain why attitudinal surveys find that “rural development” can often be a rather nebulous concept to many citizens. The federal programs are well-known and supported by local officials and rural development professionals; but often the

⁶⁴For current budgetary overview of USDA rural development programs, see *Appropriations for FY2002: U.S. Department of Agriculture and Related Agencies*, CRS Report RL31001, June 2001.

connections between constructing a new water and waste disposal system, the loss of a major employer, the decline of a rural downtown area and the targets of “rural development policy” are unclear to many rural residents. This is ironic at one level because urban “community development” generally enjoys strong support among urban beneficiaries, especially when local residents play a significant role in defining and determining the direction of development.

Creating and expanding the opportunity structure for all rural America represents a significant policy challenge. An appreciation of the enormous diversity of rural America need not overwhelm the justifiable effort to craft more flexible, comprehensive federal rural policies. On one hand, asserting that the needs of rural residents may be more appropriately decided at local levels or that generally targeted rural development programs have a hit-or-miss record does not necessarily mean an end to the federal role. On the other hand, simply extending current rural policies may leave many communities further behind. For example, only the most remote and/or impoverished rural areas today lack access to central power generation, clean water, and sewerage. And it is arguable that remoteness rather than community facilities plays the larger factor in the failure to develop. It is substantially true that no one-size-fits-all rural policy is likely to be effective everywhere. It is another matter, however, to find agreement on policies that recognize these differences. Factors that may influence success in producing new competitive advantages within the diversity of rural America include:

- more flexible policies that support development of local capacities to identify and act on local needs;
- comprehensive programs that better integrate rural development within larger urban-suburban-rural territorial development planning;
- integrated development policies that recognize agriculture as a business sector embedded within a larger business planning and support network.

As the discussion above noted, the rural sector has often been regarded by policymakers as closely connected to if not synonymous with the agricultural sector. Since the 1950s, rural policy also sought to make rural areas attractive to manufacturing employment by building and improving the physical infrastructure of rural areas, by making improvements in the quality of housing, and by programs that encouraged business to locate or expand branch plants in rural areas. Certainly, infrastructure, housing, and sustainable employment generation programs will continue to be needed in any comprehensive rural policy, but exactly what infrastructure is needed may vary from region to region depending on an area's socioeconomic base, its demographic characteristics, and a community's objectives. Alternative agriculture production systems and/or new agriculture-based businesses may well have different infrastructure needs and different business development needs than either more traditional agriculture or traditional business development have required in the past.

Agricultural-based Innovation in Rural Development. If agricultural policy has tended to see rural well-being as simply a corollary of a strong agricultural production sector, rural development professionals and agencies generally ignore contemporary agriculture as a viable economic base with potential for significant growth opportunities in rural America. Nearly 50 years of steadily declining farm

numbers and steadily increasing farm sizes and efficiencies explains much of this disconnection. In fact, agriculture lost its status as a major rural growth engine many years ago. An industrialized agriculture dominated by export-oriented commodity production and a federal agricultural policy that directs most resources toward enhancing these sectors may seem to provide little in the way of a viable base on which rural development professionals and local residents might build future development opportunities. Agricultural policy, as it is currently constructed, could become even less relevant to rural residents as other changes pull rural America into new relations with urban areas. Some observers have argued that farm institutions, e.g., financial institutions, political, research, and educational organizations are not well-equipped to become effective rural institutions.⁶⁵ Others have argued that by continuing to absorb the majority of development resources directed to rural areas and, thereby, making it difficult to create new areas of competitive advantages in rural America, current agricultural support programs can actually hurt rural communities.⁶⁶

In metro farming or farming within commuting distances to metro regions, diversification of the agricultural enterprise and experiments with different forms of production may offer opportunities to integrate agriculture more broadly into rural development planning. While diversification in some ways runs counter to the logic of both horizontal and vertical integration in agriculture, policies that better coordinate agriculture with other business development may produce both new opportunities for preserving and enhancing agriculture as well as new rural development possibilities through agriculture. One avenue for connecting agriculture to broader rural business planning is value-added agriculture.

Value-added enterprises. Value-added agricultural production has become widely seen as a means for creating opportunities for primary producers to capture more of the value of their commodities. In June, 2001, Secretary Veneman announced nearly \$10 million in value-added agricultural market development grants, 25% for renewable energy alone. The 2002 House farm bill (H.R.2646) passed in July, 2001 also would provide authorization for \$60 million per year, FY2002-2011, for value-added agricultural production including establishment of Agricultural Innovation Centers for technical assistance to value-added enterprises. Value-added production, processing, and/or marketing could permit producers to increase the share of the household food dollar now captured by commodity marketers and up-stream processors. With increasing market segmentation, high-quality, differentiated products hold some promise for expanding or preserving the role of agriculture in many rural areas while adding to regional economic diversity. While the term is a catch-all phrase for a variety of processes, the growth areas of most value-added agriculture are of two general types: (1) value-added food products that are perceived to offer consumers a higher level of quality, greater nutrition, convenience, or foods produced in particular ways, e.g., organic; and (2) industrial, non-food value-added products derived from grains or oil-seeds, e.g., ethanol, soy oil, corn-starch. These

⁶⁵Browne, William P. *The Institutional Failure of National Rural Policy*. Report prepared for the Rural Policy Program, Aspen Institute, Washington, D.C., 1991.

⁶⁶Stauber, Karl N. "Why invest in rural America - and how? A critical public policy question for the 21st century." *Economic Review*, Federal Reserve Bank of Kansas City, Second Quarter, 2001

two broad categories of value-added agricultural products have potentially different implications for rural communities.

Much current discussion of value-added food products concerns either premium pricing for food products or *value-added food processing*. Value-added processing aims at capturing more of a commodity's food value at the local level. Food processing is a highly competitive, global business requiring constant product differentiation. This type of value-added production also tends to be labor intensive and to require more skilled workers, especially in product development and marketing. Small, innovative firms may be particularly capable of developing this type of production for both domestic and international markets. For example, value-added production of a genetically modified proprietary commodity or, food produced through organic systems are also examples of enhanced economic value for which consumers are willing to pay a premium over similar but undifferentiated products. The policy question that arises for rural communities is whether value-added food processing offers as viable a development path for communities as it might offer enhanced opportunities for particular farmers.

Industrial value-added agricultural production uses a considerably larger volume of agricultural commodities than does value-added food production, but this type of production tends to be capital intensive and may employ fewer, and lower-skilled workers relative to the investment needed or the value of the output. Corn-derived ethanol as a gasoline blending ingredient is probably the best known example of an industrial value-added business, but a variety of other products are also possible that may have industrial uses, e.g., starch, corn gluten. Corn-starch based packaging, e.g., packing "peanuts," and packing made from pulp flax straw and straw-based particle board are other examples of industrial value-added agriculture. To the extent that industrial value-added plants are owned by outside firms, the effects on rural development could be

Box 5: Investments in Value-Added Agriculture

A study of the value-added industry in Illinois estimated that farmers growing specialty corn and soybeans between 1999 and 2005 would see their combined income rise by \$79 million over that period.

Agra Resources Co-op built and operates a successful ethanol plant at Albert Lea, Minn. Owned by 500 Iowa and Minnesota farmers, it doubled its production capacity in less than two years and doubled the value of each farmer's initial investment

Golden Oval Eggs began in 1994 with more than \$20 million in equity from 700 corn producers in Iowa and Minnesota. It has doubled capacity. Producer-investors received \$3.77 per bushel of corn delivered in 1998.

Dakota Growers Pasta began operation in 1994. It has 1,100 durum wheat producer members. In early 1998 it became the second largest pasta maker in the U.S. with a capacity of 500 million pounds per year. Its goal is to become the nation's largest provider of private label pasta.

South Dakota Soybean Processors is an organization of 2,100 farmers from South Dakota and Minnesota that began processing soybeans in 1996. They process 70,000 bushels of soybeans per day and sell as far north as Canada and west to the Pacific Coast.

more limited than, for example, producer-owned, value-added cooperatives. These so-called “New Generation” cooperatives are focused more on creating and supplying emerging niche markets. These coops create dual contracts where farmers are obligated to deliver a certain amount of a commodity and the cooperative is obligated to buy the commodity. New Generation coops have been organized to process alfalfa, bison, carrots, cattle, and milk among other products.

Industrial value-added agriculture may make an excellent economic fit for some rural areas, especially those farming-dependent areas with large supplies of bulk commodities.⁶⁷ For example, in the Red River Valley in Minnesota, a sugar beet growers’ cooperative purchased processing plants 25-30 years ago that today employ 1800 unionized workers.⁶⁸ Box 5 lists examples of other industrial value-added agricultural businesses.

As the agro-food system continues to segment globally and new demands are placed on food products by consumers, other opportunities for high-end food products may open for innovative alternative agricultural production systems and their surrounding rural communities. Value-added foods grown and processed organically, regionally-branded food products, and foods that can be produced and locally marketed within metro areas could provide significant new opportunities for agricultural innovation.⁶⁹ Small, innovative farms and value-added agricultural business located within metro regions could find their location ideal for growing a small business. Growing and marketing products to ethnic communities might also provide new markets for growers within commuting distances to urban markets. Internet marketing may also be an option for more remote farms and communities developing value-added food products.

The increasing consumer orientation of the agricultural economy could open new entrepreneurial activity for rural areas. New marketing channels, alternative production systems, and local use, however, can create different community and regional demands. Under various policy incentives, local and regional governments and businesses might increase their purchase of regionally produced value-added food and industrial products. Research on the impacts of agricultural regulations on smaller producers might be necessary. Farms and agricultural businesses that are oriented to food products rather than bulk commodities may also increasingly require the kinds of business services that non-agricultural businesses have long relied upon, e.g., advertising, marketing, management consulting, information systems. While USDA Rural Development’s Rural Business and Cooperative Service programs can

⁶⁷Experience in Sweden also suggests that on-farm processing strengthens the competition of domestic bulk commodity production more than bulk commodity production alone. See Eckman, S. “*The economics of on-farm processing: model development and an empirical analysis.*” *Journal of the International Association of Agricultural Economists* 18(2), 1998.

⁶⁸Witness statement at Field Hearing of the House Agricultural Committee, Sioux Falls, South Dakota, May 2, 2000.

⁶⁹The term “value-added” has historically referred to manufacturing. In the sense used here however, agricultural products grown in particular ways or that contain some particular characteristic that produces a price premium to the grower over the standard commodity is also “added value.”

play a central role, the programs of the Department of Commerce's Small Business Administration and Economic Development Administration are also useful resources within integrated value-added business strategies.⁷⁰ By specifically targeting small and diversified farms for business development within a broader business and economic development strategy, local areas may open new opportunities for developing entrepreneurial capacity in local areas.⁷¹

Agricultural innovation and environmental policies. As discussed above, the environmental aspects of agricultural production are likely to become more important in the future. With populations becoming more clustered around urban and suburban areas, agriculture is finding itself under new regulatory pressures which may also create new opportunities for value-added agriculture in food products. A variety of new community and regional growth planning mechanisms in many areas of the country have recently been subsumed under the general term of "smart growth planning." These programs are originating at local, regional, and state levels. Regional smart growth symposia have been held in such high growth areas as Atlanta and South Florida and others are planned for Chicago and Colorado. While smart growth planning can describe a wide range of land use policies, there are four general principles that unify this perspective on regional growth: First, smart growth legislation tends to encourage and support mixed-use land development, i.e., integrating industrial, housing, and retail uses rather than zoning them into separate areas as much older growth planning advocated. Second, smart growth policies generally favor locating new development within center cities and their older suburbs rather than spreading out into fringe areas. Third, the emphasis on increasing density in already built-up areas has meant planning at a scale capable of producing pedestrian-friendly neighborhoods with a greater emphasis on public transit. Fourth, smart growth policies place strong value on preserving and enhancing critical environmental areas, especially farmland and open space preservation.⁷² It is this latter emphasis that has most relevance to non-metropolitan areas.

Smart growth initiatives in many urban and suburban areas have implications for agriculture. To the extent such initiatives become more widely adopted, they may be expected to further influence agriculture and farmland in and near metro regions. Programs that help preserve farmland can help maintain viable local agriculture. Through purchase of development rights (PDR) and transfer of development rights, local areas can help ensure that farmland is preserved. The USDA's Economic

⁷⁰Developing and expanding value-added manufacturing of agricultural products might take a lesson from the success of manufacturing extension centers that have proven successful in improving the performance of small firms. See Ehlen, Mark A. "The economic impact of manufacturing extension centers." *Economic Development Quarterly*, 15(1), February, 2001.

⁷¹The development research literature has begun paying close attention to the role of networks in successful rural development strategies: "Vertical" networks that link rural spaces into the agro-food sector and "horizontal" networks that link rural geographies into more general and non-agricultural process of change. See Murdoch, J. "Networks - a new paradigm for rural development." *Journal of Rural Studies* 16(4), October, 2000.

⁷²Nickerson, Cynthia. "Smart growth: implications for agriculture in urban fringe areas." *Agricultural Outlook*, April, 2001.

Research Service has identified 1,062 counties that have land subject to some degree of urban influence. Many of these counties also contain significant amounts of crop and pastureland. While some observers have pointed to various “green payment” proposals as a means of both helping maintain farming preservation as well as supporting farm household income, smart growth policies in conjunction with alternative agricultural production systems might also play a role in producing new agriculture products to meet urban and suburban needs.

Farmers markets are common in many urban and suburban areas. Other direct marketing arrangements are also possible in metro areas. The Small Farm Entrepreneurial Development Initiative was one policy recommendation in the National Commission on Small Farms 1998 Report, *A Time to Act*. This initiative was conceived as a way to preserve farming and farmland. The initiative also pointed to the value of agricultural preservation in narrowing the distance between consumer and producer. With growth in organic markets and concern with food safety discussed earlier, direct marketing of farm products could become an important rural development strategy for many areas. Producing higher-value agricultural products, such as low-input or certified organic products, grass-fed beef, and regionally-branded products, could stimulate development of new agricultural practices that are compatible with suburban smart-growth policies and urban proximity. By restricting state funding to those areas designated as high growth, smart growth policies might lower conversion pressures on farmland by driving up the costs of development outside designated growth areas.

For farm-dependent counties and other areas heavily reliant on the production of bulk commodities, other environmentally related innovations could present additional growth opportunities. Although much research remains to be done, carbon sequestration, i.e., storing atmospheric carbon dioxide within soils or biomass, has been suggested by some as a valuable environmental amenity suitable for agricultural areas. Not only does carbon sequestration help build up the carbon content of soils, it may offer new sources of income to growers as an environmental resource for reducing a major greenhouse gas. Bioplastics and biofuels also offer some potential for agriculturally-based environmental innovations. While Agricultural Research Service research is at a basic stage, new agricultural crops with environmentally useful characteristics might offer growers new markets:

- *Cuphea*, native to temperate regions of the U.S., offers some potential to replace oils currently used in detergents and other industrial products, e.g., coconut and palm oil.
- *Vernonia* oil (epoxy oil) has the potential to replace solvents in paints and become part of the finished coating which could reduce pollution from solvents.
- Meadowfoam (*Limnathes alba*) has been modified chemically to develop new products for personal care, lubricants and detergent industries.
- *Crambe* is currently grown in North Dakota. With development of new markets for its oil and meal, the crop could become an important industrial crop.
- New products for *jojoba*, commercially raised for its oil and exported to Europe and Japan, might have greater commercial potential with development of new co-products.

- Currently, soy oil is being manufactured in Nebraska to address an important agriculturally related environmental problem. An estimated three million gallons of petroleum-based oil are used to lubricate irrigation-well shafts in arid states. There is long-expressed concern over this oil seeping into groundwater supplies; soy oil is proving to be a valuable substitute.⁷³

Creating and expanding new opportunities may require reconsidering how agriculture is integrated into overall rural development trajectories and how it might become better integrated and better positioned within rural and regional economies. Under current structural conditions, it is difficult to see how the trend toward reduced farming activities will change. Under different policies, however, it is possible to see agriculture becoming a more viable part of rural development as well as a source of business innovation in many parts of the U.S. Although agriculture's role will differ in the overall economic mix of a region, if there exists a social objective of maintaining farms and farming communities within larger regional economies, public policies that help create and support new competitive advantages for agriculture as part of a comprehensive policy for rural America are likely to be decisive.

Current Legislation. The 107th Congress has shown considerably interest in agricultural innovation and value-added agriculture. **H.R. 2402**, the Agricultural Producers Marketing Assistance Act would provide grants to assist value-added businesses by, among other provisions, creating an Agricultural Innovation Center demonstration project to provide technical assistance, business planning, and marketing development to start-up firms. Additional legislation includes tax credit provisions for ethanol production (**S.907**), the Value-Added Development Act for American Agriculture (**H.R. 1093**), and the Farmers' Value-Added Agricultural Investment Tax Credit Act (**H.R. 1094**). Other related legislation to encourage business innovation includes the Entrepreneurial Incubators Development Act of 2001 (**H.R.1418**), which would provide legal, technological, and intellectual property rights assistance to small and medium-sized firms. The Renewable Energy from Agricultural Products (REAP) Act (**H.R.2000**) would create tax credits for electricity produced from biomass and agricultural waste. The Working Lands Stewardship Act of 2001 (**H.R. 2375**) would provide grants to assist conventional farmers in their transition to organic production and the promotion of farmer-to-consumer marketing. The Agricultural Risk Protection Act of 2000 (**P.L.106-224**) provides research funding for developing genetically altered tobacco as a medicinal crop (Sec. 222) and for a corn-based ethanol research pilot plant (Sec. 226). The legislation also provides for \$15 million in competitive grants for technical assistance and business planning for value-added agriculture product marketing. Finally, Section 602 of the Farm Security Act of 2001, the 2002 House farm bill (**H.R. 2646**) passed in July, 2001, amends the 2000 Agricultural Risk Protection Act (P.L.106-224) to permit \$60 million to be used for value-added grants for each fiscal year 2002-2011. Not less than \$5 million of this funding for FY2002 and not less than \$10 million for FY2003-2004 is provided for grants to establish Agriculture Innovation Centers for technical assistance to value-added agricultural businesses.

⁷³An estimated 100,000 gallons of Soy Bio-drip irrigation oil is projected to be sold this year by a plant in Nebraska. See Carlton, J. "Farm community gets creative to survive." *Wall Street Journal*, June 6, 2000.

Conclusions

Perhaps a central question in any discussion of rural policy is, What is the “rural issue” about which policy makers, the public, and the private sector should be concerned? Is it that many rural communities lag behind urban areas on a list of various socioeconomic indicators? Is it poverty? Is it simple economic growth in non-metro regions or something more broadly called “community development?” Is it the conservation and preservation of rural social, economic, physical, and environmental capital? A corollary question is whether existing policies reinforce current competitive advantages in rural areas or exacerbate disadvantages? Are rural polices helping rural areas organize and direct local resources to create new competitive advantage? Do current farm polices, which rely heavily on commodity support, help or hinder the development of economically viable communities? Inasmuch as rural communities will have to respond to complex social and macroeconomic issues far outside their control, is developing local capacity for managing future change a useful way of thinking about the goals of rural policy? While such questions defy simple answers, they may help frame a discussion of how a changing global agro-food system and rural America are altering the effectiveness of current policies and point to where public policy might assist rural communities and residents in building on their own distinctive capacities to encourage new investment and new opportunities.

Rural policy today is not characterized by an integrated set of federal programs designed for rural people. More often than not, most federal rural programs have been modest extensions of programs designed for urban areas, e.g., Department of Transportation, Environmental Protection Agency, Department of Interior. When agriculture dominated rural economies, policies that strengthened and improved agriculture tended to strengthen and improve much of rural America. Although the agriculture/rural development linkage has declined significantly, rural development policy has not evolved into an integrated set of programs. USDA is the lead agency in coordinating federal rural policy and still has the largest budget of any federal agency directed toward rural development issues, even though social transfer payments, e.g., Social Security, Medicare, put more federal funds into rural areas than any program. Past Congressional action has recognized the importance of policy integration and federal coordination, but these initiatives were not fully implemented. The 1996 Farm Bill (P.L.104-127), for example, called for establishment of an Interagency Working Group, comprised of senior-level officials from all federal agencies providing services in rural areas. More recently, the Congressional Rural Caucus emphasized the fragmentation of rural policy in their recommendations for appointment of a Special Assistant to the President for Rural Affairs and for designation of rural policy leadership within each federal department. These initiatives have not been fully realized.

For rural areas adjacent to metro regions, it may not be unreasonable to consider how strengthening and improving urban and older suburban areas could be as important a de facto rural policy as any policy targeting rural areas specifically. Rural areas adjacent to urban areas where small and medium size towns exist are sites of the most dynamic non-metro growth and diversification today. Little on the horizon suggests that this dynamic is likely to change significantly in the coming decade; smart

growth policies could reinforce it. For such a territorial approach to be effective, metro areas would have to integrate the non-metro adjacent areas into their development planning decisions, which raises political jurisdictional issues. But thinking of rural areas in conjunction with urban and suburban planning (and vice versa) could offer new opportunities for rural development generally and for metro and urban-fringe agriculture particularly were agricultural to be better integrated into regional economic and environmental development strategies. Innovations in diversified, value-added farming operations supported by new marketing channels represent niche business opportunities that could contribute to the overall economic mix in non-metro regions within commuting distances of urban areas. The kinds of agricultural and business infrastructure and services that such agricultural production might require, however, may be different from that which has long supported traditional, commodity agricultural production.

For remote rural areas, the problems are more daunting. Sparse populations spread over wide distances make the provision of public services and the construction and maintenance of new infrastructure extremely expensive. Agricultural areas, however, even those predominantly reliant on production of bulk commodities, could develop more value-added innovations suggested by the structural changes noted above, e.g., identity preserved commodities for supply chain production. Producer-owned cooperatives have a venerable history in rural America. Innovative business models that build on that tradition might offer new opportunities for producers in farm-dependent areas.

Rural development policy today remains focused primarily on the agricultural and manufacturing sectors. While this served many rural areas well in the past, it is a matter of debate whether such a sectoral focus provides the most effective, coherent, and comprehensive policy perspective for the future. To the extent that rural revitalization is an important public objective, farm policy is unlikely to be the major vehicle by which such revitalization can be accomplished. Such concerns, however, do not mean that the traditional rural economy of agriculture, mining, and timbering can be ignored. To the contrary, agriculture will remain an important economic sector in many non-metro areas; and it will be critical in farming-dependent areas. Restructuring and invigorating agriculture will be very much a part of any comprehensive rural policy. Farming operations in metro regions, especially smaller and moderate-sized operations, should also be part of any comprehensive development and planning policies. However, new policies that also focus on rural areas as distinctive if varied geographies, containing a mix of economic activity and future possibility might open different development paths and new competitive advantages. Comprehensive rural development policies that improve the capacities of rural areas to meet future challenges should help to strengthen the agricultural sector within these local economies.

Successful commercial farms will most likely continue to grow in size and to supply most of the bulk commodities sold domestically and internationally. The evolution of supply chains over the next decade is likely to further change the relation between these farms and their surrounding communities. If a goal of public policy is to enhance the potential of agriculture throughout metro and non-metro regions, publicly funded research on alternative production systems and new marketing channels might be a consideration. Publicly funded research to enhance farmers'

value-added activities might also improve some farm household incomes. How such businesses might also improve the general well-being of rural areas is unclear, although to the extent that farmers are able to capture a greater share of the value chain at the site of production, the local profit picture is likely to improve. Other farms, the vast majority of which do not make significant contributions to traditional agricultural production, may benefit from assistance to become more effective producers and marketers under alternative production systems. Given the increased concern over the costs and distributional inequities in current farm payment programs, the Congress is likely to consider how farm policies might be redesigned to strengthen agriculture within the mix of rural economic activities, perhaps targeting payments where they may have more important community effects rather than to areas where they have little impact on development planning.

Regional policies that better link urban, suburban, and rural geographies may create new costs but also contribute to new benefits in jobs, infrastructure, and education. In the past, a competitive agriculture sector and, later, a growing manufacturing sector, were seen as the way to establish and maintain rural prosperity and well-being. A rapidly changing global agro-food system and new rural realities suggest that policies more directly targeted to building new competitive advantages in rural America can only become assets to whatever forms agricultural production might assume in coming years.

Appendix A: Chronological Overview of Selected Rural Development Provisions, 1987-2000⁷⁴

100th Congress, 1987-1988

P.L.100-219 (12/29/87)

The Rural Crisis Recovery Program Act of 1987. Amended the Rural Development Act of 1972 to direct the Secretary of Agriculture to provide grants for educational, retraining, and counseling assistance to farmers and rural families who had been adversely affected by the rural economic crisis of the 1980s.

P.L.100-242 (02/05/88)

Housing and Community Development Act of 1987. Amended the Housing and Urban-Rural Recovery Act of 1983 to limit interest rates on elderly and handicapped housing loans.

Title III: Rural Housing. Amended the Housing Act of 1949 to extend rural housing insurance and guaranty authority through FY 1989. Directed the Secretary of Agriculture, subject to appropriations, to carry out a FY 1988 and 1989 demonstration rural housing voucher program. Funds such program through the Rural Housing Insurance Fund.

Directed the Secretary of Agriculture, subject to appropriations, to carry out a moderate income rural housing guaranteed loan demonstration program.

Restricted occupancy in rural housing for elderly or handicapped projects to persons whose incomes conform with low-income tax credit eligibility requirements.

P.L.100-387 (08/11/88)

Disaster Assistance Act of 1988.

Title III. Subtitle D: Rural Businesses. Directed the Secretary to make rural industrialization loan guarantees to assist rural businesses (including cooperatives)

⁷⁴The legislative provisions listed and briefly summarized here are confined primarily to those rural community and economic development initiatives involving (1) physical infrastructure development and expansion (2) housing issues and (3) business and industry related issues.

and Indian tribes and organizations adversely affected by drought, hail, excessive moisture, or related conditions in 1988.

Directed the Secretary to conduct a survey of agriculture-related rural businesses to determine the adverse effects of the 1988 drought and report to the appropriate congressional committees.

Expressed the sense of the Congress concerning the need for comprehensive rural economic assistance.

Title IV: Subtitle A: Water-Related Assistance. Water Management for Rural Areas. Authorized the Secretary to: (1) undertake water-problem related projects, including research, grants, technical assistance, loans, and extension services; and (2) cooperate with other Federal agencies, State or local units, universities, Indian tribes, or public or private entities.

101st Congress, 1989-1990

P.L.101-82 (08/14/89)

Disaster Assistance Act of 1989. Title IV: Rural Businesses. Directed the Secretary to provide loan guarantees through the Rural Development Insurance Fund to rural business enterprises that suffered disaster damage in 1988 or 1989.

Title V: Water-Related Assistance. Amended the Consolidated Farm and Rural Development Act to direct the Secretary to establish an emergency water assistance grant program for rural and small communities with significant water quantity or quality shortages or declines. Obligated at least 50% of program funds for rural communities of less than 5,000 persons.

P.L.101-402 (10/01/90)

Amended the Emergency Low Income Housing Preservation Act of 1987 to extend specified emergency low-income housing programs.

P.L.101-501 (11/03/90)

Augustus F. Hawkins Human Services Reauthorization Act of 1990. Authorized the use of discretionary grants for: (1) planning and development of rural housing (including low-income rental housing) and community facilities; and (2) instructional (rather than recreational) activities for low-income youth. Required that instructional activities be carried out on the campus of an institution of higher education.

P.L.101-555 (11/15/90)

Authorized appropriations for the National Telecommunications and Information Administration for FY 1990 and 1991. Directed the Secretary of Commerce in conjunction with the Secretary of Health and Human Services, to establish an advisory panel to develop recommendations for the improvement of rural health care through the collection of information needed by health care providers and for improvements in the use of communications to disseminate such information.

P.L.101-220 (12/12/89)

Amended the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to authorize research into new commercial products from natural plant materials. Amended the Disaster Assistance Act of 1989 to make earthquake losses in ornamentals, orchards, forest crops, and rural business enterprises eligible for disaster assistance under such Act. Increased such rural business enterprise assistance limits to \$300,000,000.

P.L.101-624 (11/28/90)

The Food, Agriculture, Conservation, and Trade Act of 1990. Title XXIII: Rural Economic Development Act of 1990 - Subtitle A: Amended the Consolidated Farm and Rural Development Act to establish in the Department the Rural Development Administration.

Subtitle B: Coordination of Rural Development Efforts. Established: (1) a Rural Partnerships Investment Board to provide lines of credit for rural economic development revolving funds; (2) in the Treasury the Rural Business Investment Fund; and (3) local revolving funds. Amended the Consolidated Farm and Rural Development Act to: (1) establish a delivery system for certain rural development programs; and (2) revise water and waste facility financing provisions.

Subtitle C: Water and Waste Facilities. Amended the Farm Credit Act to authorize lending for water and waste projects. Established a rural wastewater treatment circuit rider program.

Amended the Consolidated Farm and Rural Development Act to establish: (1) emergency community water assistance grants; and (2) water and waste facility loans and grants to alleviate health risks.

Subtitle D: Enhancing Human Resources. Provided for enhanced rural community access to advanced telecommunications. Amended the Consolidated Farm and Rural Development Act to: (1) authorize loans for business telecommunications partnerships; and (2) establish rural emergency assistance loans

Subtitle E: Rural Business and Emergency Assistance. Amended the Rural Electrification Act of 1936 to: (1) establish a technical assistance unit; (2) defer

economic development loan payments; and (3) establish in the Treasury the Rural Incubator Fund to promote rural economic development.

Amended the Rural Development Act of 1972 to establish: (1) an Extension Service rural economic and business development program; and (2) a program to provide rural citizens with technical and management training. Amended the Consolidated Farm and Rural Development Act to establish rural technology grants. Amended the Rural Development Act of 1972 to establish rural development research grants. Amended the Rural Electrification Act of 1936 to provide for the appointment of an Assistant Administrator for Economic Development.

Subtitle G: Rural Revitalization Through Forestry. National Forest - Dependent Rural Communities Economic Diversification Act of 1990. Authorized the Secretary upon a rural community's request, to establish a rural forestry and economic diversification action team to develop a plan to promote economic diversification and enhance local economies dependent upon national forest resources. Authorized the Secretary to make loans to economically disadvantaged communities for related purposes.

Subtitle H: Miscellaneous Provisions. Amended the Consolidated Farm and Rural Development Act to: (1) establish local income-based loan rates for health care and related facilities; (2) establish a loan restructuring and servicing program for distressed community facility program borrowers; (3) authorize broadcasting system grants; and (4) revise and extend through FY 1995 the grant program for financially stressed farmers, dislocated farmers, and rural families.

102nd Congress, 1991-1992

P.L.102-237 (12/13/91)

Food, Agriculture, Conservation, and Trade Act Amendments of 1991. Title VII: Rural Development. Amended the Rural Development Act of 1972 to authorize the Secretary to make grants to academic medical centers and land grant colleges to establish rural health leadership development education programs.

Title III: Farmers Home and Rural Development Programs. Appropriated funds for: (1) Office of the Under Secretary for Small Community and Rural Development; (2) Farmers Home Administration; (3) Rural Electrification Administration; and (4) Rural Development Administration.

P.L.102-428 (10/21/92)

Rural Electrification Administration Improvement Act of 1992. Amended the Rural Electrification Act of 1936 to revise discounted loan prepayment provisions.

P.L.102-550 (10/28/92)

Housing and Community Development Act of 1992. Title VII: Rural Housing. Amended the Housing Act of 1949 to extend for FY 1993 and 1994 the authorization of appropriations and loan guarantee and contract authority for specified rural housing programs. Directed the Secretary to carry out a rural housing voucher program to assist very-low income families and persons to reside in rural rental housing. Established within the Farmers Home Administration an Office of Rental Housing Preservation to provide technical and financial assistance to projects for the preservation of rural rental housing.

Prohibited the transfer of any rural housing program to the Rural Development Administration.

Title XIV: Housing Programs Under Stewart B. McKinney Homeless Assistance Act. Subtitle A: Housing Assistance. Directed the Secretary of Agriculture to make available for lease or purchase at least 10% of Farmers Home Administration-acquired single family properties in each fiscal year for housing for the rural homeless. Provided for program participation and employment of homeless persons.

Directed the Secretary of Agriculture to establish a rural homelessness grant program, with priority given to communities not receiving significant McKinney Act assistance.

Public Law: 102-551 (10/28/92)

Amended the Food, Agriculture, Conservation, and Trade Act of 1990 to direct the Administrator of the Rural Electrification Administration to: (1) encourage the development of consortia to provide health care or educational services through telecommunications in rural areas of a qualified local exchange carrier service area; and (2) provided grants (\$1.5 million maximum award, three-year maximum disbursement) for such purposes. Extended the termination date for certain distance learning and medical link programs provisions of the Food, Agriculture, Conservation and Trade Act of 1990.

103rd Congress, 1993-1994**Public Law: 103-115** (10/26/93)

Amended the Food, Agriculture, Conservation, and Trade Act of 1990 to redefine "rural community" for purposes of assistance programs for forest-dependent rural communities.

P.L.103-129 (11/01/93)

Rural Electrification Loan Restructuring Act of 1993. Amended the Rural Electrification Act of 1936 to prescribe guidelines under which the Rural Electrification Administrator (the Administrator) makes insured electric and telephone loans. Authorized appropriations for: (1) electric hardship loans; (2) electric municipal rate loans; (3) telephone hardship loans; and (4) telephone cost-of-money loans. Amended the parameters of the rural telephone bank loan program.

Amended the Consolidated Farm and Rural Development Act to authorize the Secretary of Agriculture to make loans for water and waste disposal facilities serving certain rural residents to any borrower to whom a loan has been made under the Rural Electrification Act of 1936.

P.L.103-318 (08/26/94)

Northern Great Plains Rural Development Act. Established the Northern Great Plains Rural Development Commission to study the economic needs of, and develop a ten-year rural economic development plan for, the Northern Great Plains (North Dakota, South Dakota, Nebraska, Iowa, and Minnesota).

P.L.103-354 (10/13/94)

Department of Agriculture Reorganization Act of 1994. Title II: Department of Agriculture Reorganization Subtitle C: Rural Economic and Community Development. Authorized the Secretary to establish in the Department the position of Under Secretary of Agriculture for Rural Economic and Community Development to succeed the Under Secretary of Agriculture for Small Community and Rural Development.

(Sec. 232) Provided for the establishment in the Department of: (1) the Rural Utilities Service; (2) the Rural Housing and Community Development Service; and (3) the Rural Business and Cooperative Development Service. Abolished the Rural Electrification Administration.

P.L.103-427 (10/31/94)

Amended the Consolidated Farm and Rural Development Act to expand the eligibility for certain rural development grants and loans through FY 1998 of certain timber dependent communities adversely affected by the Forest Plan for a sustainable economy and a sustainable environment.

P.L.104-127 (4/4/96)

Federal Agriculture Improvement and Reform Act of 1996. Title VII: Rural Development Subtitle A: Amended the Food, Agriculture, Conservation, and Trade Act of 1990 to repeal: (1) the rural investment partnerships program; and (2) the water and waste facility loan and the rural wastewater circuit rider programs.

(Sec. 704) Revised the current rural distance learning and medical link programs into programs to finance the construction of facilities and systems to provide rural areas with telemedicine and distance learning services.

Subtitle B: Chapter I. Amended the Consolidated Farm and Rural Development Act to increase the amount of grants authorized to be made by the Secretary for water and waste facilities. Revised the definition of "rural" and "rural area," for the purposes of eligibility for grants and loans for such facilities, to limit eligibility to only those cities, towns, or unincorporated areas with populations of no more than 10,000. Revised the purposes for which the Secretary may make rural business development grants to include training in interactive communications technologies to develop international trade.

(Sec. 743) Eliminated the program of emergency community water assistance grants for smallest rural communities.

(Sec. 747) Revised rural industrialization provisions.

(Sec. 780) Repealed the Rural Business Incubator Fund.

(Sec. 793) Established in the Treasury a Fund for Rural America for rural research, development, and housing.

Chapter 2: Rural Community Advancement Program - Amended the Consolidated Farm and Rural Development Act to establish a rural community advancement program of grants, loans, guarantees, and other assistance to local communities and federally recognized Indian tribes. Established in the Treasury a Rural Development Trust Fund.

Title VIII: Research, Extension, and Education. (Sec. 886) Rural Development Research and Education Amended the Rural Development Act of 1972 by inserting: `The rural development extension programs shall also promote coordinated and integrated rural community initiatives that advance and empower capacity building through leadership development, entrepreneurship, business development and management training, and strategic planning to increase jobs, income, and quality of life in rural communities

105th Congress, 1997-1998

P.L.105-185 (6/23/1998)

The Agricultural Research, Extension, and Education Reform Act of 1998. An original bill to ensure that federally funded agricultural research, extension, and education address high-priority concerns with national or multi-state significance, to reform, extend, and eliminate certain agricultural research programs. The bill extended authorization of the Fund for Rural America (original authorization in the 1996 bill, P.L.104-127) to FY2003 for \$60 million each fiscal year

106th Congress, 1999-2000

P.L.106-136 (12/7/1999)

Perkins County Rural Water System Act of 1999. Directed the Secretary of the Interior to make grants to the Perkins County Rural Water System, Inc. (South Dakota) for the Federal share of the costs of: (1) planning and construction of the System; and (2) repairs to existing public water distribution systems to ensure conservation of resources and to make such systems functional under the new System.

P.L.106-224 (6/22/2000)

The Agricultural Risk Protection Act of 2000 provides research funding for developing genetically altered tobacco as a medicinal crop (Sec. 222) and for a corn-based ethanol research pilot plant (Sec. 226). The legislation also provides for \$15 million in competitive grants for technical assistance and business planning for value-added agriculture product marketing

P.L.106-382 (10/27/2000)

Fort Peck Reservation Rural Water System Act of 2000 Directed the Secretary of the Interior to plan, design, construct, operate, maintain, and replace the Assiniboine and Sioux Rural Water System (Water System) within the Fort Peck Indian Reservation in Montana. Directed the Secretary to enter into a cooperative agreement with the Fort Peck Tribal Executive Board regarding the Water System.

107th Congress, 2001-2002

None.

Appendix B: Targets and Objectives of Major Business, Housing, and Physical Infrastructure Support Programs in U.S.D.A. Rural Development Mission⁷⁵

Rural Utilities Service Programs

(1) **Water and Waste Disposal Direct and Guaranteed Loans.** *Direct loans* go to public bodies, organizations operated on a not-for-profit basis, and Indian tribes on federal and state reservations for development of storage, treatment, purification, or distribution of water or for collection, treatment, and disposal of waste in rural areas. A rural area may include an area in any city or town that has a population not more than 10,000. Applicants must be unable to obtain sufficient credit elsewhere to finance actual needs at reasonable rates. Loans are repayable in not more than 40 years, or the useful life of the facility, whichever is less. Loans carry interest rates not in excess of the current market yield for comparable term municipal obligations. The interest rate on loans will not exceed 5% (they are currently being made at 4.5%) for those areas where the (1) median household income of the service area falls below the higher of 80% of the statewide non-metro median household income or the poverty level; and (2) the project is needed to meet applicable health or sanitary standards. The intermediate rate, which is halfway between the poverty rate and the market rate, with a ceiling of 7%, applies to those projects that do not meet the requirements for the poverty rate but are located in areas where the median household income does not exceed 100% of the statewide non-metro median household income. *Guaranteed loans* are made to the same groups and for similar purposes except that loans are guaranteed by RUS for 80% of the loan amount or, in exceptional circumstances, 90% of the loan amount. The interest rate is negotiated between borrower and lender.

(2) **Water and Waste Disposal Grants:** Grants are made to public, quasi-public, and nonprofit associations for purposes similar to loans. Grants are directed to projects serving the most financially needy communities. Grant are made to communities that have a median household income that falls below the higher of the poverty level or 100% of the state's non-metro household income. Grant amounts provide higher funding levels for projects in communities that have lower income levels but they may not exceed 75% of the eligible development costs of the project. In addition, between 1% and 3% of the grant funds appropriated each year for water and waste are available for technical assistance and training to assist communities in identifying and evaluating alternative solutions to problems related to water and waste disposal, preparing applications, and improving operation and maintenance practices at existing facilities.

(3) **Solid Waste Management Grants.** Grants made to non-profit organizations to provide technical assistance in rural areas and towns with populations up to

⁷⁵Source: 2002 Budget Explanatory Notes for Committee on Appropriations, Volume 2

10,000, and to provide technical assistance to local and regional governments for the purposes of reducing or eliminating pollution of water resources and improve management of solid waste facilities.

(4) **Community Facility Direct and Guaranteed Loans.** Loans are made for constructing, enlarging, or improving essential community facilities in rural areas and towns of not more than 20,000 population. Eligible applicants must demonstrate that they cannot obtain funding in the commercial market. Applications for health and public safety projects receive the highest priority. Interest rates are determined by the median family income of the area and range from 4.5% to 5.375%. In the case of guaranteed loans, the loans are made by a private lender and the interest rate is negotiated between lender and borrower.

(5) **Community Facility Grants.** In most cases, these grants are used in conjunction with the direct loan program to make community facilities available, (e.g., fire stations, community centers) to the neediest communities, which often cannot afford even direct loans without additional subsidies. These grants were authorized under the 1996 farm bill (P.L.104-127).

(6) **Electric Distribution Direct Loan Program.** *Direct loans* made to finance electric distribution facilities. Interest rates are tied to the economic conditions of the areas served and the costs of providing services to the area. Most loans are made at an interest rate tied to a published index of municipal interest rates. Most RUS-financed systems have their loan rates capped at 7%; more distressed areas can qualify for hardship loans at 5%. RUS electric borrowers provide service mostly to the poorest non-metro counties or those experiencing the greatest population depletion. Borrowers must generally obtain approximately half their capital needs from the private sector. RUS *guaranteed loans* are made by the Federal Financing Bank, National Bank for Cooperatives, and National Rural Utilities Cooperative Finance Cooperation. The interest rate on loans by the Federal Financing Bank is based on the Treasury's cost of money plus 1/8%. Most loans are made for 35 years and are secured by the borrower's electric system assets.

(7) **Telecommunications Loans.** Loans made to furnish and improve telephone service, including a variety of related telecommunications purposes, in rural areas. RUS lends directly to rural telecommunication systems and guarantees loans made by other lenders. Interest rates depend on the financial condition of the borrower system and the costs of providing service to rural subscribers. Cost of money loans are supplemented by loans from the Rural Telephone Bank. Most rural systems are eligible for loans at a hardship rate of 5%.

(8) **Distance Learning and Telemedicine Loans.** This program provides financial assistance to rural community facilities, e.g., schools, libraries, hospitals, and medical centers. The Telecommunications Act of 1996 targeted rural areas because of the difficulties they have in providing high quality education and medical services. This program helps rural schools and hospitals obtain and use advanced telecommunications for health and educational services.

Rural Business-Cooperative Service Programs

(1) **Business and Industry (B&I) Guaranteed Loans.** This program finances business and industry acquisition, construction, conversion, expansion, and repair in rural areas. Loan funds can be use to finance the purchase and development of land, supplies and materials, plus pay start-up costs of rural businesses. Eligible applicants include individuals as well as public, private, and cooperative organizations. RBS may guarantee up to 80% for loans of \$5 million or less, 70% for loans between \$5 and \$10 million, and 60% for loans exceeding \$10 million. Although the RBS did make direct loans to groups in FY2001 and in previous years, the FY2002 budget does not request direct funding due to the high rate of default.

(2) **Rural Intermediary Relending Program.** These direct loans are made to private non-profit corporations, state or local government agencies, Indian tribes, and cooperatives who, in turn, lend the funds to rural businesses, private non-profit organizations, and others. Assistance from the intermediary to the ultimate recipient must be for economic development projects, establishment of new businesses, and/or expansion of existing businesses, creation of new employment opportunities and/or saving existing rural jobs.

(3) **Rural Business Enterprise Grants.** These are grants to encourage the development of small and emerging business enterprises; creation and expansion of rural distance learning networks; and to provide educational instruction or job training related to potential employment for adult students. Grants are also available to qualified non-profit organizations for provision of technical assistance and training to rural communities for improving passenger transportation services or facilities.

(4) **Rural Business Opportunity Grants.** Grants made to public bodies, non-profit organizations, Indian tribes, and cooperatives for training and technical assistance to rural businesses, economic planning for rural communities, or training for rural entrepreneurs or economic development officials.

(5) **Rural Economic Development Loans.** Zero-interest loans for RUS borrowers who then re-lend the funds at zero interest to businesses.

(6) **Rural Economic Development Grants.** Grants to establish a revolving loan fund program to promote economic development in rural areas. The revolving loan fund provides capital to non-profit organizations and municipal organizations to finance community facilities in rural areas that promote job creation and education and training to enhance marketable skills, or improve medical care.

(7) **Rural Cooperative Development Grants.** These grants are made to fund the establishment and operation of centers for rural cooperative development with their primary purpose being the improvement of economic conditions in rural areas. Grants may be made to non-profit institutions or higher education institutions. Grants may be used to pay up to 75% of the cost of the project and associated administrative costs. The applicant must contribute 25% from non-

federal sources. Grants under this program are competitive and awarded on specific selection criteria.

(8) **Empowerment Zone/ Enterprise Community Initiative.** The EX/EC Program is a grant making initiative whose objective is to revitalize low-income rural communities in a manner that attracts private sector investment. The purpose of the program is to demonstrate the value of innovative and strategic alliances between State, Federal, and local resources to improve the economic strength of rural communities. The first three years of the 10 years authorized for Round II EZ/ECs has been funded through the 1999, 2000, 2001 Agriculture Appropriations Acts.

Rural Housing Service Programs

I. Home Ownership Programs

(1) **Section 502 Housing Direct and Guaranteed Loan Programs.** The program provides fixed-interest mortgage financing to very-low (less than 50% of median family income in the rural area where they live) and low income (50-80% of median family income) families who are unable to obtain credit elsewhere. Loans are subsidized at a graduated interest level from 1% over Treasury's cost of money, depending on family income. The program also provides "supervised credit" to its borrowers to help them maintain their homes during financial crises. This program also offers a 90% guarantee as an encouragement to private lenders to make loans to rural residents whose incomes are between 80 and 115% of the median county income. Loans may be up to 100% of market value or acquisition costs, whichever is less, thereby removing the down payment obstacle.

(2) **Mutual Self-help Technical Assistance Grant Program.** This program allows very-low and low income rural Americans to use "sweat equity" to reduce the costs of home ownership. Nonprofit organizations and local governments may obtain grant funds to enable them to provide technical assistance to groups of families that work cooperatively to build their houses. Typically, future homeowners use Section 502 direct loans to finance their mortgages and, through their own labor on the house construction, are able to reduce costs by 10-15% while learning construction skills.

(3) **Section 504 Rural Housing Loan and Grant Program.** This program provides grant assistance up to \$7,500 (\$15,000 at the Secretary's discretion) to very-low and low-income homeowners to remove health and safety hazards from their houses. Grants are limited to elderly home owners (age 62 and older) whose incomes are 50% or less of the median in the rural area where they reside.

(4) **Section 533 Housing Preservation Grant Program.** This program provides funding through nonprofit groups and government agencies to very-low and low-income home owners to repair their houses, and to rental property owners for the rehabilitation of units which will be rented to very-low and low-income families.

(5) **Section 523 Rural Housing Site Loan Program.** This program provides funds to nonprofit organizations to develop building sites for participants in the Self-Help

Housing Program. The nonprofit organizations resell these improved sites to program participants at cost. Interest rates on the loans is 3% and the nonprofit organizations repay the loans when they sell these properties.

(6) **Section 524 Rural Housing Site Loan Program.** This program is very similar to the Section 523 program above except that once the sites are developed, they may be provided to any low- or moderate-income person, not just to the Self-Help participant.

II. Rental Housing Programs

(1) **Section 515 Rural Rental Housing Direct Loans.** This program uses a public-private partnership to provide subsidized loans at 1% to limited-profit and nonprofit developers to construct or to renovate affordable rental complexes in rural areas. The low interest rate helps keep debt service low in order to support below-market rents. Many of these projects also use low-income housing tax credit proceeds. The program is typically used in conjunction with the Section 521 Rental Assistance Program. With assistance, tenants pay a maximum of 30% of their income toward rent and utilities. Some 515 projects also use Housing and Urban Development Section 8 project-based assistance which enables additional very-low income families to be helped.

(2) **Section 538 Rural Rental Guaranteed Loan Program.** This program provides 90% loan guarantees to certified lenders to make rental housing affordable to low and moderate-income residents. For the nonprofit sector, the program covers 97% loan-to-value ratios.

(3) **Farm Labor Housing Program Direct Loan Program.** This program provides direct loans to farm owners, public bodies, and nonprofit organizations to provide living quarters, furnishings, and related facilities for domestic farm workers. The Section 514 loans have a 1% interest rate and a maximum of 33 years. The Section 516 grants are used in conjunction with the loans to finance affordable, off-farm rental housing to low-wage farm workers. Grants are available only to governments or nonprofit organizations. Farm workers who lease 514/516 units must be either US citizens or permanent residents and the majority of their income must come from farm work.

(4) **Section 521 Rental Assistance Program.** The objective of this program is to help mitigate the burden on more than one in five rural household who pay more than 30% of their income on housing costs. Rental Assistance is project-based assistance used in conjunction with Section 515 and Section 514/516 programs. The program provides rental assistance directly to the owners of some

Rural Housing Service-financed projects under contracts specifying that beneficiaries will pay no more than 30 of their income for rent. The subsidy goes to the housing unit, not an individual tenant.

**Appendix C: Rural Community Advancement Program (RCAP)
Funding Obligations, FY 1997-2002** (in thousands of dollars)

	FY97	FY98	FY99	FY00	FY01(est)	FY02(est)
Total	\$2,461,090	\$2,764,323	\$2,822,105	\$2,549,958	\$3,728,354	\$2,829,032
Business and Industry Direct and Guaranteed Loans	\$828,750	\$1,120,716	\$1,206,452	\$978,694	\$1,811,880	\$1,000,000 (a)
Rural Business Enterprise Grants	\$47,728	\$37,347	\$36,410	\$39,407	\$47,056	\$40,568
Rural Water and Waste Disposal Direct and Guaranteed Loans (b)	\$836,084	\$802,201	\$727,258	\$776,341	\$934,866	\$984,069
Community Facility Direct and Guaranteed Loans and Grants	\$226,529	\$285,879	\$277,780	\$296,277	\$473,000	\$472,405
Water and Waste Disposal Grants	\$519,599	\$515,593	\$571,035	\$557,542	\$556,248	\$529,490
Solid Waste Managt. Grants	\$2,400	\$2,587	\$2,670	\$2,735	\$3,532	\$3,500
Rural Business Opportunity Grants			\$500 (c)	\$3,750	\$3,700	\$3,000
Rural Community Develop. Initiative Grants				\$6,000 (d)	\$6,000	\$5,987

Source: USDA. Explanatory Notes for Committee on Appropriations, Various years

- (a) No direct loans in FY2002 budget request
- (b) Excludes disaster supplemental grants
- (c) First year for this grant account
- (d) First year for this grant account