

**EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL OF ECONOMIC ADVISERS**



**STRENGTHENING THE RURAL ECONOMY**

**APRIL 2010**

# **STRENGTHENING THE RURAL ECONOMY**

## **EXECUTIVE SUMMARY**

Rural areas are home to about 50 million Americans and are an essential part of the overall economy. This report surveys the current state of rural America and describes the Obama Administration's policies for strengthening the rural economy. Many of these policies are already being implemented through the American Recovery and Reinvestment Act of 2009. But further work remains to ensure the prosperity and vitality of rural America.

### **The Current State of Rural America**

Our survey of the current state of rural America identifies both important strengths and significant challenges facing the rural economy.

- The rural economy is more economically diverse than it once was. Agriculture directly employs only a small fraction of rural workers, though ancillary businesses are included in other sectors. Manufacturing, services, government, and wholesale and retail trade are important additional sources of rural employment.
- The U.S. agricultural sector remains more productive than those of other high-income countries and is highly competitive in international markets.
- The labor force of rural America is aging and its educational attainment lags behind that of urban areas for the working-age population.
- Improvements in health status in rural areas have not kept pace with those in urban areas, and access to doctors and health services has been an important challenge in rural areas.

### **Growing New Businesses in Rural Areas**

One key category of Administration policies for strengthening rural America is focused on growing businesses and expanding employment opportunities.

- The Recovery Act greatly increased support for small business lending through the Small Business Administration (SBA). The dollar value of SBA loans to rural areas was 2.5 times higher in December 2009 than in January 2009.
- Steps to promote clean energy are likely to have a particularly important impact on rural areas by increasing the demand for biofuels and encouraging renewable energy generation.
- The Recovery Act is investing \$2.3 billion to preserve and improve the quality and accessibility of Federal lands. By doing so, it is creating important new opportunities for rural tourism and recreation.

### **Strengthening Rural Infrastructure**

Another category of Administration policies is focused on continuing essential investments in rural infrastructure. Such investments create jobs today and improve the productivity of the rural economy in the future.

- Through the Recovery Act and other initiatives, the Administration is investing heavily in accelerating the spread of broadband internet service to rural areas.
- The Recovery Act provides funds to upgrade and improve the efficiency of existing water infrastructure. It also includes \$3.7 billion in loans and grants for rural water and wastewater infrastructure aimed at addressing the lack of safe drinking water in some rural areas.

### **Improving America's Support of Agriculture**

A third category of policies seeks to improve Federal support for agriculture. By doing so, these policies aim to strengthen this key sector of the rural economy.

- As part of the Administration's National Export Initiative, the President has called for further measures to open foreign markets to agricultural goods.
- The President's 2011 budget calls for a number of reforms to existing farm support programs, including tighter eligibility requirements to preclude the wealthiest farmers from receiving payments and changes to the crop insurance program to reduce windfall profits.
- Initiatives such as the Know Your Farmer, Know Your Food program promote the development of local and regional food systems that deliver fresh food to consumers who live in close proximity to farms.

### **Investing in the Education and Health of Rural Communities**

Through the Recovery Act and other legislation, the Federal government is making key investments in rural education and health care to reduce disparities between rural and urban areas.

- The State Fiscal Stabilization Fund in the Recovery Act is providing \$7 billion for education in rural communities as a down payment on the President's broader goal of creating a more educated rural workforce.
- The President's American Graduation Initiative, together with infrastructure investments in rural broadband, will help make high-quality online courses available, especially benefiting rural areas.
- The Recovery Act invests nearly \$26 billion in health information technology, which is likely to be particularly valuable in dealing with the unique difficulties rural residents face in accessing doctors and hospitals.
- In addition to the benefits provided to all Americans, health insurance reform through the Patient Protection and Affordable Care Act provides special support for the rural medical workforce by expanding graduate medical education positions in rural teaching hospitals and by supporting training for doctors and nurses in rural health care.

## CONTENTS

|  | PAGE |
|--|------|
| I. INTRODUCTION  | 1    |
| II. THE CURRENT STATE OF RURAL AMERICA                         | 3    |
| III. GROWING NEW BUSINESSES IN RURAL AMERICA                   | 15   |
| IV. STRENGTHENING RURAL INFRASTRUCTURE                         | 26   |
| V. IMPROVING AMERICA'S SUPPORT OF AGRICULTURE                  | 30   |
| VI. INVESTING IN THE EDUCATION AND HEALTH OF RURAL COMMUNITIES | 33   |
| VII. CONCLUSION  | 39   |
| REFERENCES   | 40   |



## I. INTRODUCTION

The United States is comprised of large cities and small towns, mountain ranges and rolling plains, skyscrapers and vast countryside. Underlying this variation, there is a diverse population – with equally wide-ranging needs and contributions – spread across our city centers and rural landscape. The Federal Government works to foster the commercial and cultural exchanges that tie America together. This report explores one segment contributing to our diverse culture and economy: rural America.

The report begins with a survey of the current state of rural America. Roughly 50 million Americans live in rural areas. Agriculture, which has traditionally been a key base of the rural economy, continues to record strong productivity gains and significant growth. But rural America is a more diverse economy than it once was. Rural residents are employed in a wide range of industries, including manufacturing, services, government, and wholesale and retail trade. While rural America offers many opportunities, its income levels, poverty rates, educational levels, and mortality rates continue to lag behind the rest of the country. It is important to take steps to reduce these disparities.

Federal support for rural America involves coordinated efforts across numerous agencies, including the Department of Agriculture, Department of the Interior, Department of Health and Human Services, and many others. This report outlines the Administration's policies to lay a foundation for 21<sup>st</sup>-century growth that will continue to strengthen and diversify the rural economy, support rural workers and businesses, and put rural America on a path toward a more prosperous future.

We organize the discussion of the Administration's policies for strengthening the rural economy into four main categories. The first category includes policies to support the growth of new businesses in rural areas. These policies include programs to help strengthen small businesses in a wide range of rural industries. They also involve incentives to greatly expand clean energy opportunities, which are often centered in rural areas. There are also important new opportunities for rural tourism and recreation.

A second category of policies is aimed at strengthening rural infrastructure. Infrastructure investment is central to rural prosperity. Without road, bridges, water projects, and telecommunications, rural America cannot get its products to market efficiently or be fully integrated with the rest of the economy. For this reason, the Federal government has traditionally supported rural infrastructure projects. The Obama Administration has continued that support in important and innovative ways, such as by supporting the expansion of broadband internet access to rural areas.

A third category of policies focuses on strengthening the agricultural sector. American agriculture is among the most productive in the world. The Administration has proposed measures to further open international markets to U.S. agricultural products, proposed reforms to better target farm support programs, and urged a greater focus on local and regional food systems.

The fourth category of policies is aimed at strengthening the labor force and improving the quality of life in rural America by investing in education and health care. A new set of policies aims to close the gap in educational outcomes between rural and urban areas. The Administration is also investing in the health of rural America by taking actions to increase the affordability and quality of health care, while bolstering the medical workforce and infrastructure to address the specific challenges facing rural areas.

Many of these investments in rural America were begun as a part of the American Recovery and Reinvestment Act of 2009 (see Box 1). This wide-ranging legislation sought to deal with the immediate economic crisis while also laying a foundation for future growth. As such, it represents one of the largest investments ever in the future prosperity of the country as a whole, and of rural areas in particular. The Administration is committed to continuing the reinvestment in rural America through its policies going forward.

**Box 1: Recovery Act Funding for Rural Communities and Households**

The American Recovery and Reinvestment Act of 2009 was designed to cushion the fall in demand caused by the financial crisis and the subsequent decline in business and consumer confidence, household wealth, and access to credit. It is making new investments in people, businesses, and infrastructure that will help to ensure the economy returns to a path of robust growth.

Through the first quarter of 2010, \$373 billion of tax cuts and outlays had been made, out of an estimated total of \$787 billion included in the Act. The Council of Economic Advisers (CEA) estimates that these outlays and tax relief raised employment by 2.2 million to 2.8 million relative to what it otherwise would have been (Council of Economic Advisers 2010). About half of these jobs relate to spending and tax relief that went directly to families. Over the coming months, an increasing portion of the spending will take the form of government investment in everything from roads and bridges to a smarter electrical grid and telecommunications.

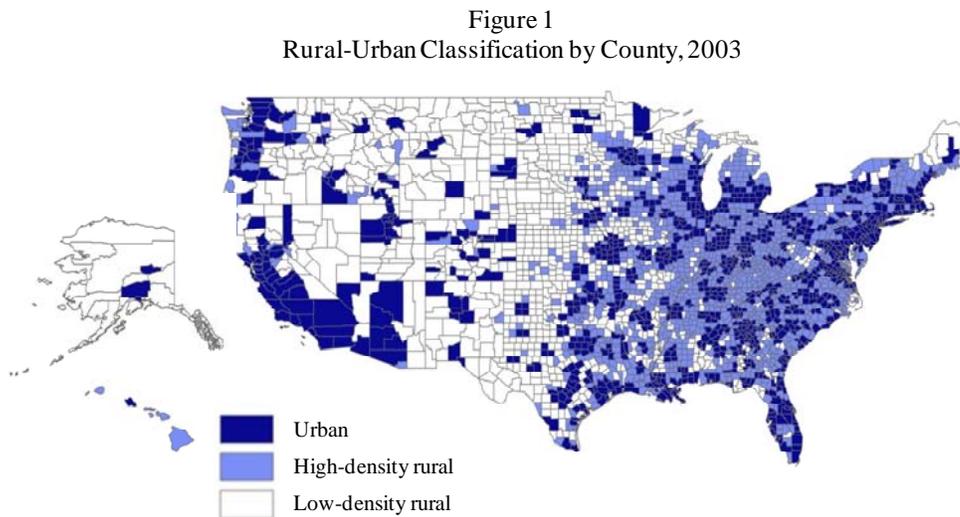
The Recovery Act includes funding consistent with the Administration's policies to foster economic growth and improve the quality of livelihoods in rural America. Throughout this report, we discuss how it helps to further priorities in education, clean energy, health care, infrastructure, small business, and recreational opportunities. The Recovery Act includes funding directed to rural communities, such as \$7 billion for education, \$3.7 billion for water infrastructure, and \$650 million for job training; and funding for more general objectives from which rural areas are expected to benefit, such as \$90 billion for Medicaid, \$9.6 billion for renewable energy grants and loans, \$4.7 billion for broadband, and \$3 billion for small business loans. While the Recovery Act funding will have a significant impact in these specific areas, its overall contributions to the recovery and growth of the economy will also have a large impact on the health of the rural economy.

## II. THE CURRENT STATE OF RURAL AMERICA

While rural America offers many opportunities, it also faces unique challenges in growing its economy and maintaining an educated and healthy labor force. In this section, we begin by describing how the U.S. population is distributed geographically and the sectors in which the rural population is employed. We then examine how rural communities have fared compared with their urban counterparts in labor force participation, educational attainment, poverty rates, and access to health care.

### A. The Diverse Rural Economy

About 17 percent of the U.S. population lives in rural counties.<sup>1</sup> Figure 1 shows that virtually every state contains rural areas, reflecting the country's diversity of communities. That said, rural counties are not uniformly distributed. With the exception of the coast, the Western United States is dominated by low-density rural land where the distance between metropolitan areas is larger and population density is lower, while the Eastern United States is mainly a mixture of high-density rural and urban areas.



Note: Counties classified based on Department of Agriculture urban influence continuum codes and CEA methodology.

Today's rural economy has diversified substantially since 1970. Table 1 shows that manufacturing, government, services, and wholesale and retail trade are important sources of employment for rural America. In total, they represented 68 and 76 percent of total employment for the low and high-density rural population in 2007, respectively, up from 61 and 73 percent in

---

<sup>1</sup> The share of the U.S. population categorized as living in rural areas ranges from 17 to 49 percent, depending on the definition. Unless otherwise noted, analysis in this report defines urban counties as those containing metropolitan areas. Of the remaining counties, rural counties with greater than 25 persons per square mile are classified as high-density rural; those with fewer are classified as low-density rural. Counties are identified by the Federal Information Processing Standard (FIPS) code for the 2000 Census. In a small number of cases, counties changed boundaries or FIPS codes between 1970 and 2000. These changes are particularly prevalent in Alaska and Virginia. Other states affected to a lesser extent are Arizona, Colorado, Florida, Hawaii, Maryland, Missouri, Montana, New Mexico, and South Dakota. In general, we drop counties that did not exist in the 2000 Census.

1970. Growth in services was particularly large over this time period in both rural and urban areas. Earnings show a similar pattern by industry over time.

Table 1  
Employment by Rural-Urban Classification

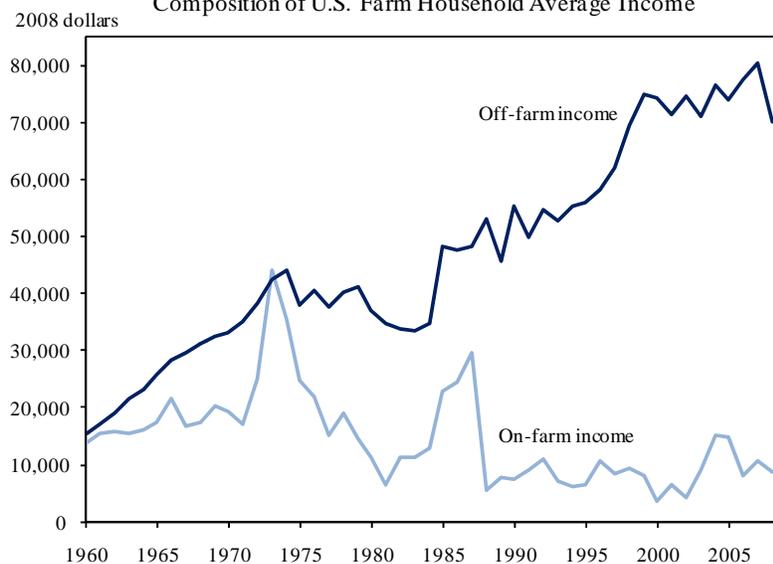
|                                     | Percent of employment |      |                    |      |                   |      |
|-------------------------------------|-----------------------|------|--------------------|------|-------------------|------|
|                                     | Urban                 |      | High-density rural |      | Low-density rural |      |
|                                     | 1970                  | 2007 | 1970               | 2007 | 1970              | 2007 |
| Agriculture, forestry, and fishing  | 3                     | 1    | 13                 | 6    | 23                | 12   |
| Manufacturing                       | 22                    | 7    | 23                 | 13   | 10                | 7    |
| Government                          | 18                    | 13   | 17                 | 15   | 19                | 18   |
| Services                            | 19                    | 44   | 16                 | 34   | 15                | 30   |
| Wholesale and retail trade          | 20                    | 14   | 17                 | 14   | 17                | 13   |
| Finance, insurance, and real estate | 7                     | 10   | 4                  | 6    | 4                 | 6    |
| Mining                              | 1                     | 0    | 2                  | 1    | 3                 | 3    |
| Other                               | 10                    | 10   | 9                  | 10   | 8                 | 11   |

Note: Some industry definitions changed somewhat between 1970 and 2007. The analysis excludes 22 county equivalents, all but one in Alaska; independent cities in Virginia are combined with their associated counties.

Source: Special tabulation from Department of Commerce (Bureau of Economic Analysis), Regional Economic Accounts, CA25 and CA25N, and CEA methodology.

The agricultural sector is also an important but declining source of employment and earnings for rural America. In 2007, the agriculture, forestry, and fishing sector constituted about 6 percent of employment in high-density rural areas and about 12 percent of employment in low-density rural areas, down from 13 percent and 23 percent in 1970, respectively. Note that these shares somewhat understate the importance of agriculture in rural America, since ancillary businesses are counted in other sector categories. For example, workers who truck or wholesale crops or livestock are generally not included in the agriculture sector classification, though livestock breeders and cotton ginners are.

Figure 2  
Composition of U.S. Farm Household Average Income



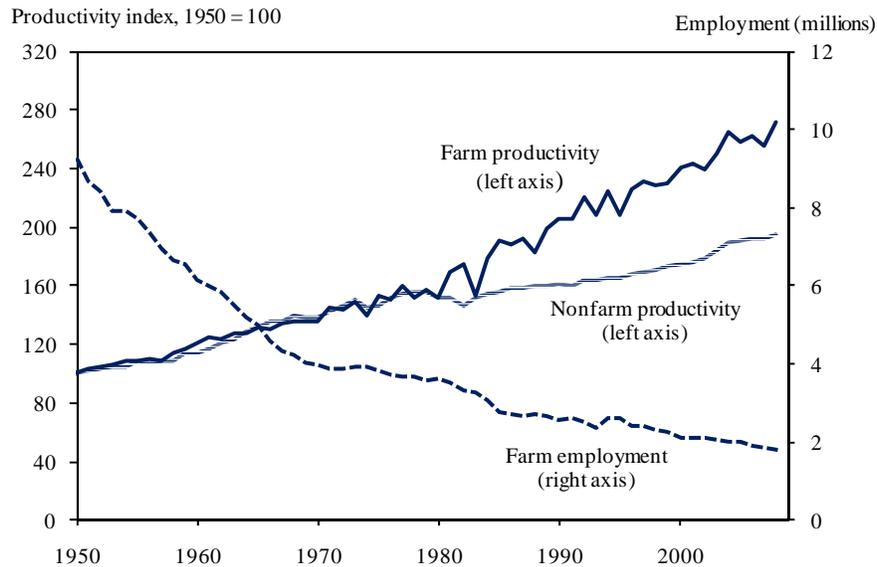
Source: Department of Agriculture (Economic Research Service), Operator Household Income.

Among individuals who identify themselves as farmers, agriculture has become a less important source of income.<sup>2</sup> Figure 2 shows that about half of farm household income came from the farm in 1960. Today, the vast majority (89 percent in 2008) comes from off the farm. Because agriculture is one of the key industries that distinguishes rural America from urban areas and because of its continued contribution to productivity and trade, we discuss it in greater detail below.

### 1. The U.S. Agricultural Sector

Perhaps the defining feature in the history of U.S. agriculture is its persistent gains in efficiency. Even relative to America's surge in productivity over the past half century, American agricultural productivity has grown rapidly. Figure 3 shows that farm productivity nearly tripled in the second half of the twentieth century, while nonfarm productivity increased by about 75 percent. Almost all of this divergence in productivity growth occurred after 1980. A consequence of this tremendous increase in productivity is that, despite increases in total agricultural output, employment has declined. In 1900, about 41 percent of the total U.S. workforce farmed. This share dropped to 16 percent in 1945, 4 percent in 1970, and only 2 percent in 2000.<sup>3</sup>

Figure 3  
Farm and Nonfarm Productivity and Farm Employment



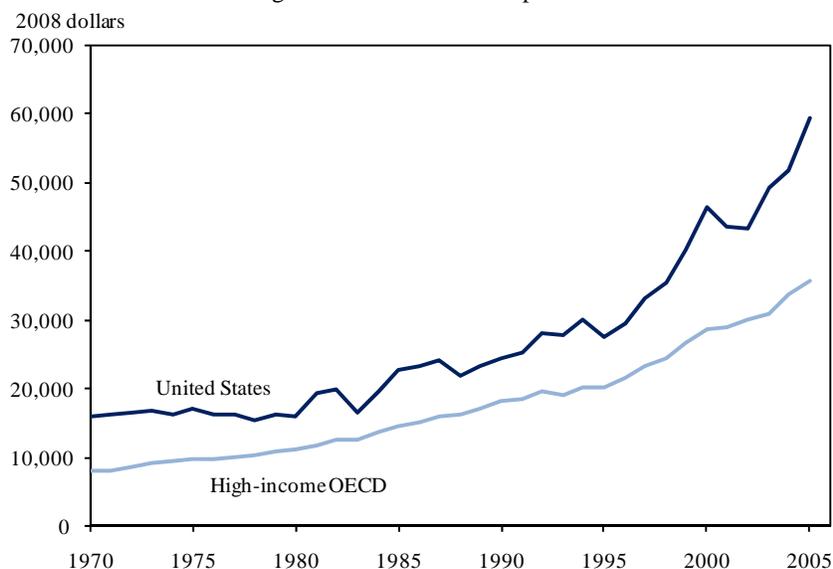
Sources: Department of Labor (Bureau of Labor Statistics), Historical Multifactor Productivity Measures, Table XG4b, and Current Employment Survey; Department of Agriculture (Economic Research Service), Agricultural Productivity in the United States, Table 1; Department of Commerce (Bureau of Economic Analysis), National Income and Product Accounts, Table 6.4.

<sup>2</sup> The data provided by the Department of Agriculture are based on different surveys before and after 1988. The survey data from before 1988 over-estimated on-farm income because they assumed that farm operator households received all farm business income, including that earned by contractors. A farmer is counted in this survey if his or her farm surpasses a minimum sales threshold, which varies over time; additionally, early years in the series included farms over an acreage threshold.

<sup>3</sup> The statistics for 1970 and 2000 are as a share of the employed labor force, whereas the earlier figures are as a share of the total labor force (Dimitri, Effland, and Conklin 2005).

Figure 4 shows how the productivity of the agricultural sector in the United States compares with that of other high-income countries. As measured by agriculture value added per worker, the United States has remained substantially more productive than other Organisation of Economic Co-operation and Development (OECD) high-income countries.<sup>4</sup> Specifically, value added per worker grew from \$16,000 in 1970 to \$59,300 in 2005 in the United States, compared with an increase from \$8,000 in 1970 to \$35,700 in 2005 in high-income OECD countries.

Figure 4  
Agriculture Value Added per Worker



Source: World Bank, World Development Indicators Online Database.

## 2. *International Trade Plays an Important Role in Rural America*

It should not be surprising that the U.S. agricultural sector is very competitive in the international market. Indeed, in 2008, U.S. agricultural exports were worth \$70 billion according to Census definitions, and \$115 billion using the Department of Agriculture's broader definition. The share of American agricultural output exported in 2007 (using the Census definitions) was 15 percent, having increased from 11 percent in 1999. Thus, access to foreign markets is very important for American agriculture. Likewise, although gross agricultural output only constituted about 2.5 percent of total GDP over this period, agriculture made up 2.8 percent of total exports in 1999, rising to 3.4 percent in 2007, according to Census definitions. Notably, this competitiveness is not primarily driven by farm support programs. Since 1991, high-value commodities (for instance, fruit and meat) have made up a larger fraction of exports than bulk commodities (for instance, wheat and rice), though they receive far less Federal support.

In addition to productivity growth, removing trade barriers has played an important role in agriculture's success. Analysis by the CEA of major free trade agreements (FTAs) between 1985 and 2005 confirms that U.S. agricultural exports increased while import growth remained

<sup>4</sup> Agriculture value added per worker measures the output of the agricultural sector less the value of intermediate inputs. Agriculture includes value added from forestry, fishing, and cultivation of crops and livestock production.

largely unchanged following these FTAs.<sup>5</sup> Table 2 shows the weighted-average growth rate in exports and imports before and after the implementation of these FTAs.<sup>6</sup> On average, in the five years following an FTA, agricultural exports to the FTA partner grew at a very rapid pace (14 percent), up from a rate of 6 percent beforehand.

Table 2  
Growth Rate of U.S. Agricultural Exports and Imports  
Around Free Trade Agreement Implementation

|        | Exports (percent) |          | Imports (percent) |          |
|--------|-------------------|----------|-------------------|----------|
|        | FTA               | Non FTAs | FTA               | Non FTAs |
| Prior  | 6                 | 1        | 11                | 4        |
| Post   | 14                | 3        | 8                 | 5        |
| Change | 8                 | 2        | -2                | 1        |

Note: See footnote for explanation. Totals may not add due to rounding.

Source: CEA analysis using data from Department of Agriculture (Foreign Agricultural Service).

Exports to the rest of the world also grew, but only at a rate of 3 percent, up from 1 percent growth beforehand. Prior to the FTAs' implementation, exports to the partner country were growing 5 percentage points faster than exports to the rest of the world, but after, they were growing 11 percentage points faster.<sup>7</sup> There is no evidence that import growth from FTA countries accelerated after the implementation of an FTA. Thus, on net, American agriculture appears to have benefited from recent trade liberalization agreements, and increased access to foreign markets has translated into increased opportunity for American agriculture.

## B. The Labor Force in Rural America

While the rural economy has become increasingly diverse, it faces a number of unique challenges regarding its labor force. First, incomes are lower and poverty rates are higher in rural areas than they are in urban areas. Second, a lower proportion of the rural population is of working age (20-64), which presents challenges for future job creation, and the share of the U.S. population living in rural counties has steadily declined over time. Third, a higher portion of rural residents are on disability and therefore unable to participate in the rural workforce. Fourth, educational attainment lags behind that of urban areas for the working-age population. Recognizing these challenges, the Administration has made education a major pillar in its policies for rural America. Its focus on expanding opportunities for small businesses, tourism and recreation, and clean energy will also help to make rural households better off while attracting a new generation of young workers.

<sup>5</sup> The analysis covers FTAs with Australia, Canada, Chile, Israel, Jordan, Mexico, and Singapore. We exclude 10 additional FTAs that the United States has implemented since 2005 because the window for evaluating the post-implementation effects is too short.

<sup>6</sup> In the table, prior refers to the annualized growth rate between 6 years before FTA implementation and the calendar year before implementation. Post refers to the annualized growth rate between the calendar year before implementation and 5 years after that. Change represents the difference between post-period and prior-period growth rates. FTA consists of the weighted-average of the bilateral trade around the FTA agreements for the listed countries. Non FTA consists of the weighted average of trade with the set of countries that have never implemented an FTA with the United States. The CEA used the Department of Agriculture's definition of agricultural products.

<sup>7</sup> Results are weighted by the amount of exports the year before FTA implementation. Unweighted results show the same pattern.

## 1. Income and Poverty Rates

On average, rural residents have notably lower incomes than urban residents. Tables 3A and 3B show that between 1979 and 1999, the average urban resident experienced greater increases in income, in both level changes and percent growth, compared with his or her rural counterpart. The poverty rate paints a similar picture. While the rural poverty rate decreased sizably between 1979 and 1999, the average rural county posts poverty rates at least several percentage points above those observed in urban counties. Note that the cost of living is higher in urban areas and ideal measures of income and poverty would adjust for these differences. We have not done so here.

Table 3A  
Per Capita Income by Rural-Urban Classification

| Classification     | 1979 (2008 dollars) | 1999 (2008 dollars) | Percent change |
|--------------------|---------------------|---------------------|----------------|
| Urban              | 21,148              | 29,189              | 38.0           |
| High-density rural | 16,283              | 22,008              | 35.2           |
| Low-density rural  | 15,910              | 20,666              | 29.9           |

Table 3B  
Poverty Rate by Rural-Urban Classification

| Classification     | Percent of population with a defined poverty status<br>(percent) |      | Change (p.p.) |
|--------------------|--|------|---------------|
|                    | 1979   | 1999 |               |
| Urban              | 11.5   | 11.9 | 0.4           |
| High-density rural | 15.5   | 14.4 | -1.1          |
| Low-density rural  | 17.4   | 16.1 | -1.3          |

Note: Annual means of per capita income and poverty rate are weighted by the county total population and the county population reporting a poverty status, respectively.

Source: Department of Commerce (Census Bureau), Decennial Census (1980, 2000).

## 2. Labor Force Participation

The extent to which a population is comprised of able, working-age people is an important indicator of potential employment. The trajectory of the labor force, measured by the age and training composition of the rural population, helps predict its future economic health. To examine the current and future economic health of rural America, we compare the average age composition in urban, high-density rural, and low-density rural counties in 1970 and 2000. Table 4 reveals that the share of the population under age 20 has declined since 1970 but remains similar across urban and rural classifications. While the share of the population in the prime working ages (20-49) has increased in both urban and rural counties since the 1970s, it continues to be substantially lower in rural counties. Rural counties also tend to be relatively older, which holds among the elderly (65+) and near-retirement (50-64) age groups.

Table 4  
Age Distribution within Urban-Rural Classifications

| Age category              | Distribution within classification<br>(percent) |      | Change (p.p.) |
|---------------------------|---|------|---------------|
|                           | 1970  | 2000 |               |
| <b>Urban</b>              |   |      |               |
| <20                       | 37.7  | 28.6 | -9.1          |
| 20-49                     | 38.6  | 44.8 | 6.3           |
| 50-64                     | 14.4  | 14.7 | 0.3           |
| 65+                       | 9.3   | 11.9 | 2.6           |
| <b>High-density rural</b> |   |      |               |
| <20                       | 38.3  | 27.9 | -10.5         |
| 20-49                     | 34.7  | 41.1 | 6.4           |
| 50-64                     | 15.4  | 16.3 | 0.9           |
| 65+                       | 11.6  | 14.7 | 3.2           |
| <b>Low-density rural</b>  |   |      |               |
| <20                       | 38.6  | 29.1 | -9.5          |
| 20-49                     | 32.0  | 38.7 | 6.7           |
| 50-64                     | 16.4  | 16.5 | 0.1           |
| 65+                       | 13.1  | 15.7 | 2.7           |

Source: Department of Commerce (Census Bureau), Decennial Census (1970, 2000).

The overall share of the U.S. population living in rural counties also has been steadily declining over time, with high-density rural counties experiencing particularly sharp declines (see Figure 5).<sup>8</sup> From 1900 to 1970, rural counties lost nearly 0.3 percentage point of the U.S. population per year. From 1970 to 2008, this trend has continued, albeit at a slower rate, costing rural counties almost 0.1 percent of the U.S. population annually. The net effect of these declines is a broad-scale population shift from rural to urban America. In 1900, about 40 percent of the population lived in a county that ultimately would be classified as rural in present-day America, whereas today that share has dwindled to half this amount.

An additional measure of labor force depth is the share of the working-age population (25-64 years old) healthy enough to be counted as an active member of the labor force.<sup>9</sup> The Federal Social Security Disability Insurance (SSDI) program provides monthly cash benefits to people who are unable to work due to a disability. In 2008, disability insurance enrollment as a share of the working-age population was 6.5 percent in high-density rural areas and 5.7 percent in low-density rural areas, compared with 3.9 percent in urban areas.<sup>10</sup> Thus, the average rural resident was much more likely to be enrolled in SSDI than his or her urban counterpart. Because individuals enrolled in SSDI are unlikely to exit from the program, these disparities are also

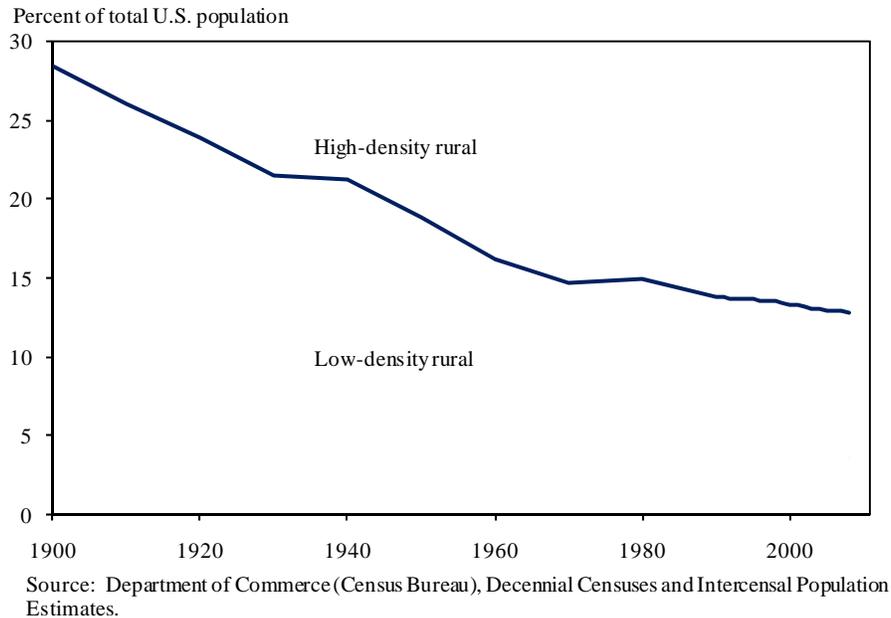
<sup>8</sup> Counties are classified as described above. Because this figure covers years before 1970, the calculations here involve more counties with changed borders or FIPS codes, though the number is still relatively small.

<sup>9</sup> The definition of “working-age population” here is different from that above due to the age categories available in the Social Security Administration’s published data.

<sup>10</sup> So as not to overstate disability “intensity,” we first net out the fraction of SSDI recipients younger than 25 or older than 64 years, roughly 5.25 percent as of December 2008 (Social Security Administration 2009).

likely to impact future labor force capacity.<sup>11</sup>

Figure 5  
U.S. Population Concentration over Time



### 3. Educational Attainment

Over time, the share of the population of ages 25–64 with more than a high school education in an average urban county has been persistently above the share in an average rural county (see Table 5). While rural counties have made great strides in ensuring that larger proportions of their populations pursue schooling beyond high school, they have been unable to close this gap. Additionally, the rate of progress in educational attainment has been slightly slower in rural areas, causing education levels in rural areas to slip further behind those in urban areas. In 2000, an urban resident was between 10 and 15 percentage points more likely to have attended college than a rural resident. Two decades earlier, this difference was between 9 and 13 percentage points.

This growth differential is driven by the share of the working-age population that has completed only high school. In the average urban county, this share fell 11 percentage points over the two decades, compared with just 3 to 6 percentage points in the average rural county. Put another way, in 1980 rural residents were 1.1 times more likely to stop attending school after high school than urban residents. By 2000, this ratio was up to 1.3-1.4.

---

<sup>11</sup> Less than one percent of claimants exit SSDI in a typical year because they are under 65 and no longer meet the standards for receiving disability benefits (Autor and Duggan 2006).

Table 5  
Educational Distribution within Urban-Rural Classifications

| Highest level of educational attainment | Distribution within classification (percent) |      | Change (p.p.) |
|---|--|------|---------------|
|   | 1980   | 2000 |               |
| <b>Urban</b>                            |  |      |               |
| < High school                           | 25.4   | 15.6 | -9.8          |
| High school only                        | 37.1   | 26.1 | -11.1         |
| > High school                           | 37.5   | 58.4 | 20.9          |
| <b>High-density rural</b>               |  |      |               |
| < High school                           | 35.2   | 18.8 | -16.4         |
| High school only                        | 40.1   | 37.3 | -2.8          |
| > High school                           | 24.7   | 43.9 | 19.2          |
| <b>Low-density rural</b>                |  |      |               |
| < High school                           | 30.1   | 17.2 | -12.9         |
| High school only                        | 41.0   | 34.6 | -6.4          |
| > High school                           | 28.9   | 48.2 | 19.3          |

Note: Educational attainment for population aged 25 to 64.

Source: Department of Agriculture (Economic Research Service) county-level tabulation from Department of Commerce (Census Bureau), Decennial Census (1980, 2000).

### C. The Status of Health Care in Rural America

Health care costs have continued to rise for individuals and families throughout the United States, while health insurance coverage has eroded for hundreds of thousands of Americans. Because health care costs account for a much larger share of rural residents' average income, the relentless rise in health care costs in recent years has disproportionately impacted them. In this section we lay out the health care challenges faced by rural residents. In Section VI, we discuss how these challenges are being addressed through the Recovery Act and health care reform.

While residents of non-metropolitan areas have comparable rates of health insurance coverage to metropolitan areas and the nation overall, they are more likely to be enrolled in public programs such as Medicaid for low-income families, the Children's Health Insurance Program, and especially Medicare for the elderly (due to the relatively older rural population) rather than holding private insurance, as shown in the Table 6.<sup>12</sup> Residents of rural areas have less access to doctors and other health care providers than their counterparts in urban areas. As a result, they are more likely to forego needed care. Finally, improvements in health status in rural areas have not kept pace with those in urban areas. See Box 2 for a description of health care

<sup>12</sup> Due to data limitations, the health care analyses in this report do not classify counties into rural and urban categories. Instead, they use the Bureau of Labor Statistics Current Population Survey's metropolitan and non-metropolitan classifications. In this table, percentages are not directly comparable to published Census results due to CEA calculations assigning individuals to only one coverage category. For those covered by multiple types of insurance, individuals were assigned to categories in the following order of precedence: Medicare, Military, Children's Health Insurance Program, Medicaid, Private Insurance. Individuals not assigned to one of these categories are considered uninsured.

and other issues in rural American Indian and Alaska Native communities.<sup>13</sup>

Table 6  
Insurance Coverage by Metropolitan Status

|                                     | Percent of total population |                  |         |
|-------------------------------------|-----------------------------|------------------|---------|
|                                     | Metropolitan                | Non-metropolitan | Overall |
| Military health care                | 2.5                         | 2.6              | 2.5     |
| Children's Health Insurance Program | 2.7                         | 3.2              | 2.8     |
| Medicaid                            | 9.1                         | 10.6             | 9.4     |
| Medicare                            | 13.5                        | 18.3             | 14.2    |
| Private insurance                   | 56.9                        | 50.3             | 55.8    |
| Uninsured                           | 15.2                        | 15.1             | 15.2    |

Note: See footnote.

Source: Department of Commerce (Census Bureau), March 2009 Current Population Survey.

### 1. *The Burden of High Costs*

Families in non-metropolitan areas are more likely than families in metropolitan areas to have a high burden in affording health insurance coverage, defined as health expenses exceeding 10 percent of after-tax family income. While total out-of-pocket health expenses are comparable in metropolitan and non-metropolitan areas (\$3,265 versus \$3,216 in 2005, the year with the most recent available data, in 2007 dollars), incomes in non-metropolitan areas tend to be lower. As a result, 24.2 percent of families in non-metropolitan areas spend more than 10 percent of their income on health insurance coverage, compared with 18.1 percent of families in metropolitan areas (Jones et al. 2009).

### 2. *Lack of Access to Doctors and Health Services*

In addition to the higher burdens from the cost of health insurance coverage, rural families have less access to health care services. For instance, rural areas tend to have fewer active doctors and specialists per person than metropolitan areas. As a result, rural residents face greater difficulties in accessing care. This complicates early detection and regular treatment of diseases such as cancer.

Non-metropolitan counties had on average 1.2 active doctors for every 1,000 residents in 2007, compared with 3.0 active doctors for the same number of residents in metropolitan areas. Metropolitan counties also had more than 3 times as many specialists, 1.1 for every 1,000 residents compared with only 0.3 for every 1,000 residents in non-metropolitan counties.<sup>14</sup>

Finally, in addition to disparities in health care infrastructure and workforce capacity, rural residents face specific geographic challenges in accessing medical care. One report found longer travel times for emergency services in small and geographically isolated rural communities

<sup>13</sup> An American Indian Area includes American Indian reservations, trust lands, tribal jurisdictions, and designated statistical areas (Ogunwole 2006).

<sup>14</sup> These statistics are generated by weighting each county by its population. The results are similar if no population weights are used.

(Chan, Hart, and Goodman 2006). This can be especially problematic for acute events such as heart attacks and strokes, where the time that elapses until the patient reaches the hospital can mean the difference between life and death.

**Box 2: The Rural American Indian and Alaska Native Population**

American Indian Areas (AIAs) are overwhelmingly located in rural areas and, as of 2000, were home to 34 percent of American Indians and Alaska Natives. Residents of AIAs lag the rest of the country in terms of poverty rates, educational attainment, and health status.

In 1989, approximately 40 percent of American Indians or Alaska Natives living in AIAs or in Alaska Native Village Statistical Areas (ANVSAs) were living in poverty, versus just 13 percent of the total U.S. population. Although the family poverty rate for American Indians and Alaska Natives in AIAs in the 48 contiguous states fell by at least 7 percentage points over the subsequent decade, in 2000 it remained three times the poverty rate for the entire U.S. population (Taylor and Kalt 2005).

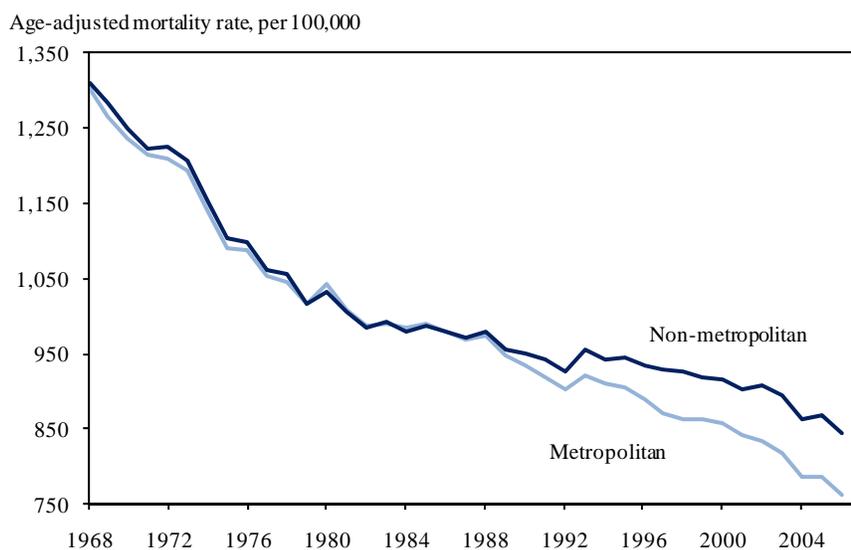
In the 2000 Census, approximately one-third of American Indians or Alaska Natives over the age of 25 who lived in AIAs or ANVSAs had less than a high school education (Ogunwole 2006). While this represented a significant improvement over the percentage in 1989 (43 percent), it remains substantially higher than the corresponding fraction for all American Indians and Alaska Natives (29 percent) or for the total U.S. population (20 percent). Also, only 8 percent of those over the age of 25 who lived in AIAs and 4 percent of those over the age of 25 who lived in ANVSAs had a bachelor's degree or higher in 2000, compared with 12 percent of all American Indians and Alaska Natives and 24 percent of the total U.S. population.

American Indians and Alaska Natives also have lower average health status compared with the rest of the U.S. population. American Indians and Alaska Natives born in 2000 had a life expectancy that was approximately 2.4 years lower than that of the entire U.S. population, and the infant mortality rate among this group was substantially higher than the general U.S. population (Department of Health and Human Services 2006). American Indians and Alaska Natives also have the highest rates of type 2 diabetes in the United States. Finally, the uninsured rate was 28 percent among American Indians and Alaska Natives in 2008, compared with 17 percent for the total population (Department of Health and Human Services 2009).

*3. Diverging Mortality Rates*

While mortality rates in the United States overall have declined over the past few decades, mortality rates in metropolitan and non-metropolitan areas have diverged since the early 1990s. Figure 6 shows that, since 1990, non-metropolitan mortality has declined at an average annual rate of only 0.73 percent, significantly slower than the metropolitan rate of 1.27 percent. While the source of this divergence is unclear, it is likely that improvements in access to health care and in the affordability of that care in rural areas could help to narrow this gap in mortality rates.

Figure 6  
Metropolitan and Non-Metropolitan Mortality Rates



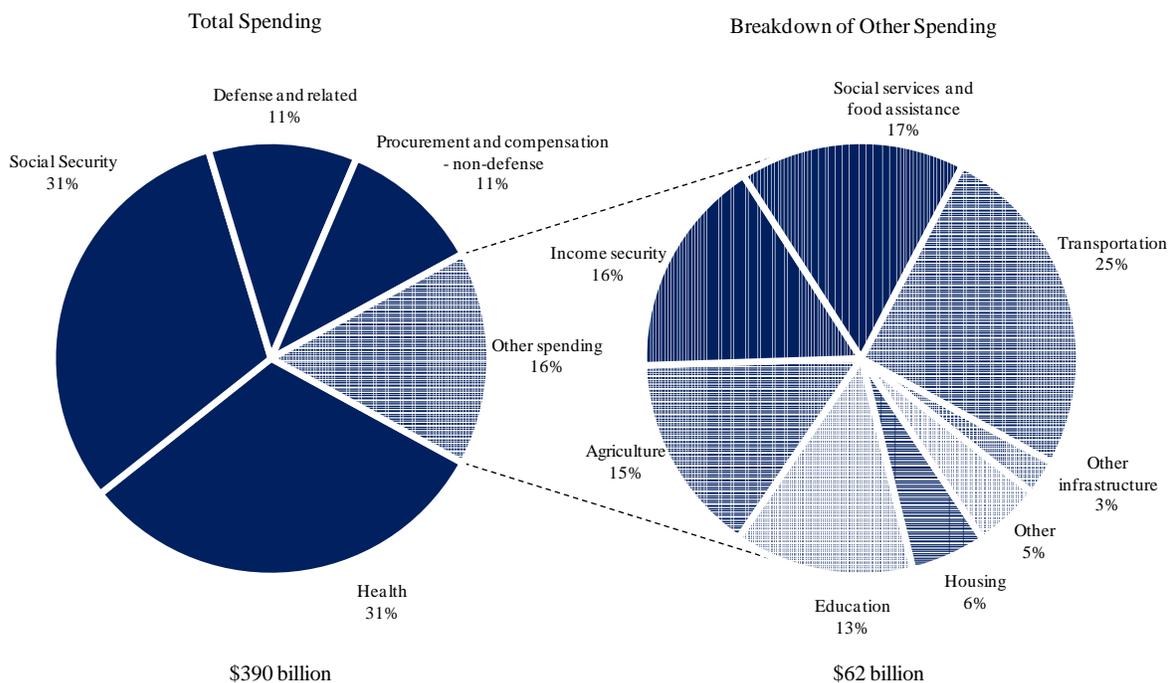
Sources: Cosby et al. (2008); Data for 2005-2006 from the Centers for Disease Control and Prevention, WONDER public data file.

#### D. Traditional Federal Support for Rural America

A key aim of Federal policy is to increase economic opportunities and overall standards of living in rural areas. While the Department of Agriculture has a significant focus on rural development, other Federal agencies also play a role, including the Small Business Administration, the Department of Health and Human Services, the Department of the Interior, and the Environmental Protection Agency, among others. Long before the Administration's recent efforts to strengthen rural America, Federal support for rural areas through these many agencies was extensive.

To illustrate this traditional support, consider expenditures in 2007. About \$390 billion in Federal funding was directed to rural areas through non-loan, non-insurance programs in that year. The left-hand pie chart in Figure 7 shows that approximately 84 percent of this funding went to health care, Social Security, military wages and procurement, and non-military wages and procurement (including the Postal Service). The remaining 16 percent – denoted as “other spending” – is further broken out in the right-hand pie chart. This “other” component of rural spending constituted about \$62 billion in 2007. About one-quarter of this spending was directed toward transportation infrastructure. Spending on social services and food assistance (17 percent), income security (16 percent), the agricultural sector (15 percent), and education (13 percent) represent the next largest areas of spending. Spending on housing and other infrastructure, while smaller, was still a substantial portion of Federal funding.

Figure 7  
Federal Spending in Rural Areas, 2007



Note: Excludes funds not assigned to a specific county, as well as loans and insurance programs, which generally do not report net outlays. Social Security includes social insurance programs for railroad workers.  
Source: Department of Commerce (Census Bureau), Consolidated Federal Funds Report.

### III. GROWING NEW BUSINESSES IN RURAL AMERICA

The previous section highlighted both the strengths of rural America and the challenges it faces. The Obama Administration is committed to building on those strengths and addressing the challenges. One key set of the Administration’s policies for rural America are programs to help businesses grow and flourish in rural areas. These policies include supporting small businesses, jump-starting the transition to clean energy, and new opportunities for rural tourism and recreation.

#### A. Strengthening Small Business

##### 1. Background

In the second half of the twentieth century, a diversifying rural economy gave the Federal government reason to expand its rural business programs beyond the agricultural sector. The three main organizations that house these programs are the Small Business Administration (SBA), the Department of Commerce’s Economic Development Administration, and the Department of Agriculture’s Office of Rural Development.

The Small Business Administration has supported loans to small businesses for over fifty years through numerous loan and financing programs, the biggest of which are the 7(a) and 504 loan guarantee programs. The 7(a) program has historically offered guarantees of up to 85 percent on loans to small businesses that would not otherwise be able to get funding. The 504 program is designed to help businesses get long-term financing to acquire fixed assets for expansion or modernization. Both programs work through qualified lenders and generally require fees for participation. Over 2007 and 2008, an annual average of more than \$2 billion in loan guarantees by the 7(a) and the 504 programs went to rural counties, representing 12 percent of their total loan volume.

The Economic Development Administration provides a variety of services to stimulate economic development and to protect underserved businesses, including a revolving loan fund program to small business owners and entrepreneurs, a trade adjustment assistance program, and an economic adjustment assistance program for businesses affected by sudden economic changes. In fiscal year 2008, it reported investing almost 69 percent of its funds for infrastructure and revolving loan funds in rural areas.

Programs in the Department of Agriculture's Office of Rural Development are explicitly geared towards encouraging economic development in rural communities. In 2008, these programs supported more than \$1.5 billion in loans and grants, \$1.4 billion of which was in the Business and Industry (B&I) Guaranteed Loan program. The B&I Guaranteed Loan program provides loan guarantees on up to 80 percent of the loan amount for loans to rural businesses.<sup>15</sup>

## *2. New Policies*

The Administration is committed to supporting rural businesses both by providing short-term relief and by promoting long-term economic growth. Small businesses were hit particularly hard in the recession. With limited access to capital markets, small businesses rely more heavily on bank lending than large businesses do, making them vulnerable to difficulties in the banking sector. Small businesses in rural areas are no exception, and the struggles that they have faced during this recession have required timely action. The Administration and Congress reacted swiftly to the needs of small businesses by passing the Recovery Act in February 2009.

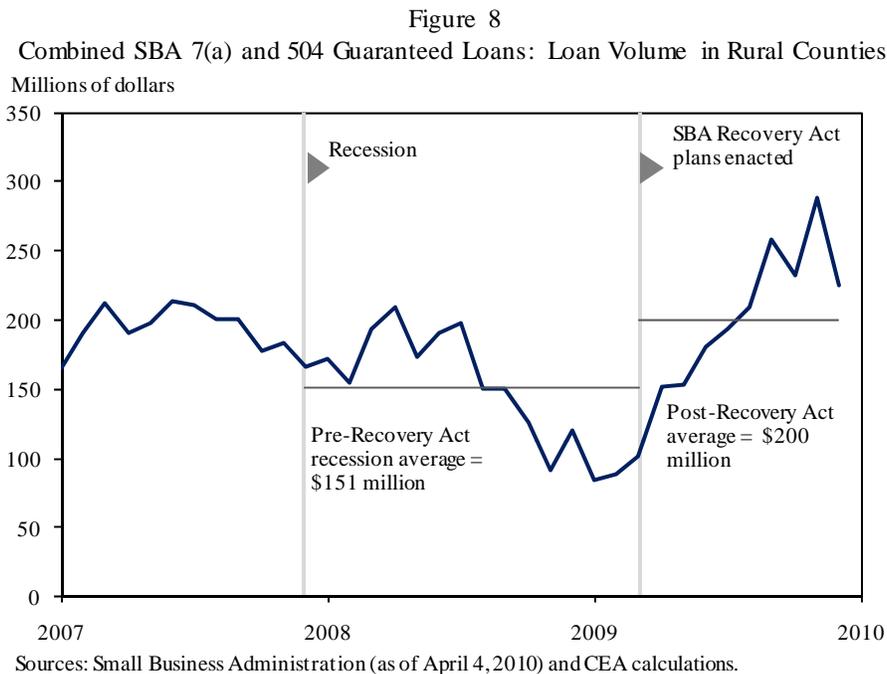
The Recovery Act included legislation that increased the resources of many of the programs that generally support small business and economic development in rural areas. The Small Business Administration's 7(a) and 504 programs were expanded by temporarily eliminating or reducing fees and raising the guarantee rates. The Rural Development Administration's B&I Guaranteed Loan Program was granted budget authority to support nearly \$1.7 billion of new loans to rural businesses. The Economic Development Administration received \$150 million to create jobs and boost development in parts of the country hit hard by the recession, and particularly those that would qualify for help under their economic adjustment assistance program. The Community Development Financial Institutions Fund also received funds to be

---

<sup>15</sup> The maximum loan amount is \$25 million in most cases. Rural is defined as all areas other than cities or towns of more than 50,000 people and the contiguous and adjacent urbanized areas. Loans can be made to businesses in non-rural areas when the business is a cooperative organization, practices value-added processing, and has all members of its cooperative located within 80 miles of the facility.

used for technical and financial assistance for American Indian and Alaska Native communities.

The Recovery Act provided support at a critical time for many rural small businesses. Figure 8 plots new monthly lending in the SBA’s 7(a) and 504 programs in rural counties from January 2007 through December 2009.<sup>16</sup> There are two principal findings. First, small business SBA-backed lending in the rural sector dropped substantially during the course of the financial crisis of 2008, as banks reined in their lending (an equivalent drop occurred in the urban sector). Second, the success of the Recovery Act program to expand credit to small business is evident. The fee elimination or reduction and the higher guarantee rates coincided with a substantially increased loan volume. By December 2009, the dollar amount of loans issued in rural counties was more than 2.5 times larger than the amount issued at the low point in January 2009.



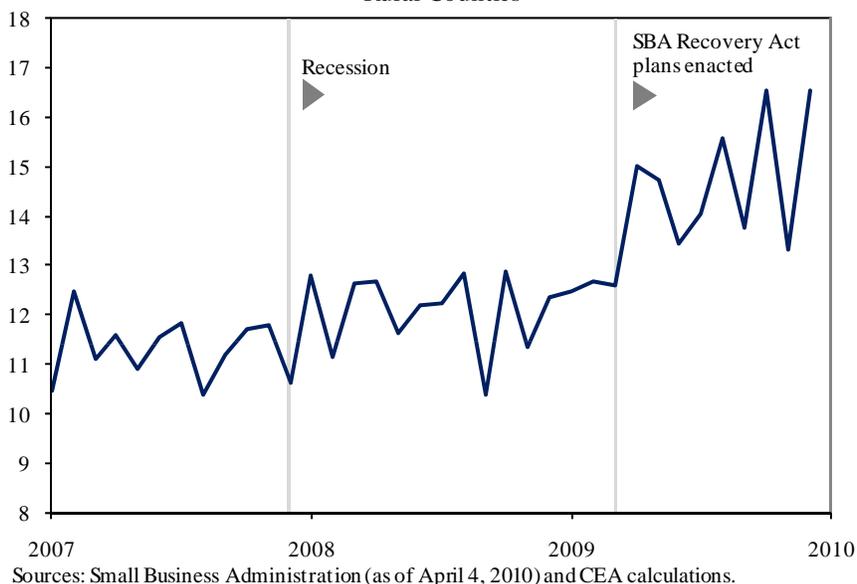
This substantial increase after the Recovery Act occurred in both rural and urban communities. However, recent SBA policies and general improvements in the lending environment appear to have especially benefited rural communities. Figure 9 shows that the percentage of SBA-backed loan dollars issued to rural counties jumped in 2009 after the Recovery Act was put into effect. The percentage of loans issued to rural counties increased to an average of 15 percent after the Recovery Act was enacted through the end of 2009, up from an average of 12 percent in 2008 and 11 percent in 2007.

The Administration’s policies are not limited to the short-term response that was essential during the recession. Long-term investment in innovation and entrepreneurship is critical for the economic health of rural communities. In addition to continuing strong support of existing programs, the Administration has introduced new policies that will foster rural revitalization. In

<sup>16</sup> Figures 8 and 9 exclude loans not assigned to a valid county in the Small Business Administration data.

particular, the Department of Agriculture will lead a strategy to promote economic opportunities through regional planning among Federal agencies and state and local governments through its Rural Innovation Initiative (see Box 5, in Section VI). Recognizing that rural areas often suffer from higher poverty and unemployment rates, the Department of Agriculture and the Small Business Administration recently announced their intent to work together to better coordinate development programs and increase the number of guaranteed small business loans (Small Business Administration and Department of Agriculture 2010).

Figure 9  
 Combined SBA 7(a) and 504 Guaranteed Loans: Share of Total Loan Volume to Rural Counties



The fiscal year 2011 budget also includes almost \$100 million for the promotion of regional innovation clusters through the Small Business Administration and the Economic Development Administration. The Economic Development Administration will use its budget allocation to distribute regional planning and matching grants to support the creation of regional innovation hubs. The Small Business Administration will promote small business participation in regional economic clusters by awarding grants on a competitive basis to facilitate the coordination of resources through business counseling, training, and mentorships. The proposed fiscal year 2011 budget also expands the Emerging Leaders Initiative and the Minority Business Development Agency, both of which will play critical roles in supporting American Indian and Alaska Native businesses by providing technical assistance and connecting business leaders to regional networks.

## B. Jump-Starting the Clean Energy Transformation

The rural economy will also benefit from policies aimed at moving the American economy toward cleaner domestic sources of energy. Existing Administration policies – the Renewable Fuel Standard recently enacted under the Energy Independence and Security Act of 2007 (EISA) and Recovery Act incentives for the development of bio-energy – will increase the amount of

bio-based transportation fuels and renewable energy produced in rural areas. Further energy and climate legislation could greatly expand the use of energy sources located in rural areas such as bio-energy, solar, wind, biomass, and geothermal to produce electricity and transportation fuels.

### *1. Increased Demand for Bio-Based Feedstocks*

The EISA requires that a minimum volume of renewable fuel be added to any gasoline sold in the United States. Renewable fuels are defined by statute as fuels derived from bio-based feedstocks such as corn, soy, sugar cane, or cellulose that have fewer lifecycle greenhouse gas emissions than the gasoline or diesel they replace. This provision will increase the volume of renewable fuel blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022. While petroleum refiners will initially rely on conventional biofuels to meet the requirement, the EISA mandates that 58 percent of the total requirement be met by advanced biofuels in 2022.<sup>17</sup> Fuel sources that could be used to meet this mandate in future years include sugar cane, switchgrass, agricultural residues, algae, and waste.

Greater use of biofuels is already leading to the location of bio-refineries in rural America, and this trend is expected to grow over time. The number of operating ethanol refineries in the United States more than doubled between 2005 and 2009, with capacity concentrated in the Midwest. The number of ethanol plants built each year and their average capacity also have increased over the past several years. In 2002, about six ethanol plants were built annually, each with an average capacity of 50 million gallons. In 2008, the number of ethanol plants built annually had increased to 26, each with an average capacity of 100 million gallons. Over the next decade, the Environmental Protection Agency (EPA) projects that between 10 and 15 ethanol plants will be built annually (Environmental Protection Agency 2010).

The increased demand for bio-based feedstocks is expected to increase net incomes in rural America. The EPA estimates that the increase in renewable fuel production due to the renewable fuel standard will result in a \$13 billion increase in net U.S. farm income in 2022 (Environmental Protection Agency 2010). This represents a 36 percent increase in net income relative to what is projected to be without the renewable fuel standard. Biofuel production tends to occur relatively close to where the feedstock is grown. Thus, the employment associated with greater biofuel production from the feedstock will further increase earnings in rural areas.

### *2. The Recovery Act Will Spur Investment in Renewable Energy*

Table 7 summarizes the Recovery Act's substantial investments in America's renewable energy future. In the short term, they will help achieve the President's goal of doubling renewable energy production by 2012. Over the longer term, they will help ensure that renewable energy sources become a major part of our supply of energy. This increased production of renewable energy from geothermal, wind, solar, and biomass will generate increased income, particularly for residents of rural communities. (See Box 3 for a discussion of how the Recovery Act is helping rural households improve the energy efficiency of their homes.)

---

<sup>17</sup> Advanced biofuels are defined by statute as having less than 50 percent the lifecycle greenhouse gas emissions of petroleum-based fuel.

Table 7  
Renewable Energy Incentives Offered to Businesses through the Recovery Act

| Renewable Energy Incentive   | Description   | Subsidy Amount   |
|--|---|--|
| Loan Guarantees  | Increase funding for the existing loan guarantee program for renewable energy and electric power transmission systems and cutting-edge biofuel projects (up to a limit of \$500 million), each of which must begin construction no later than September 2011. | \$4 billion to support approximately \$32 billion of loan guarantees.  |
| Manufacturing Tax Credit   | Funds qualified investments in advanced energy manufacturing.   | Provides a tax credit for 30% of investment.   |
| New Clean Renewable Energy Bonds   | Helps finance facilities that generate electricity from renewable energy.   | Increased from \$800 million to \$2.4 billion.   |
| Qualified Energy Conservation Bonds  | Helps finance government programs to reduce greenhouse gas emissions and for other conservation purposes.   | Increased from \$800 million to \$3.2 billion.   |
| Extension of Renewable Energy Production Tax Credit                        | Extends the eligibility dates for tax credit to facilities producing electricity from wind, biomass, geothermal energy, municipal solid waste, qualified hydropower, and marine and hydrokinetic renewable energy.  | 2 cents per kWh (2008 dollars) for wind, geothermal, and hydroelectric generation and 1 cent per kWh for biomass and landfill gas. |
| Investment Tax Credit in Lieu of Production Tax Credit                     | Post-2008 facilities that produce electricity from wind and other renewable resource can choose the energy investment tax credit or the production tax credit (but not both).   | Provides a 30% tax credit for investments in energy projects.  |
| Repeal of Certain Limits on Business Credits for Renewable Energy Property | Repeals the \$4,000 limit on the 30% tax credit for small wind energy property and the limitation on property financed by subsidized energy financing.  |  |
| Coordination with Renewable Energy Grants                                  | Allows for a grant instead of claiming the investment or production tax credit for facilities put in service in 2009 or 2010. If construction begins in 2009 or 2010, the grant can sometimes still be claimed.   | The grant is 30% of the investment in the facility.  |
| Wood-to-Energy Grants  | Provides grants to promote the use of biomass.  | \$50 million.  |

Sources: Department of Energy (Loan Guarantee Program; Recovery Act funding); Department of Treasury (Internal Revenue Service); Department of Agriculture (Forest Service).

The Energy Information Administration's (EIA) revised Annual Energy Outlook for 2009 projects that the fraction of electricity generated from renewable energy will grow due to the renewal of Federal tax credits and the funding of new loan guarantees through the Recovery Act (Department of Energy 2009b). Wind generation is expected to be more than double what it would have been without the Recovery Act by 2012. Geothermal and biomass capacity are also projected to grow significantly more due to the Recovery Act.

States with largely rural populations have some of the highest technical potential for renewable development and therefore will likely be the principal recipients of renewable energy projects spurred by these Federal incentives. Table 8 shows that low-density rural counties have the highest technical potential for solar and wind-based energy, while high-density rural counties have the highest technical potential for crop and forestry biomass and for renewable energy from animal waste residues. In particular, North Dakota, Montana, and other portions of the Great Plains rank highest in terms of wind intensity, while the most certain wind resources are located in the southeastern plains. States in the West – Utah, Arizona, California, New Mexico, Colorado, and Nevada – have the highest solar energy potential. Western states also tend to have the highest proportion of geothermal potential (where magma has penetrated the Earth's upper crust).

Table 8  
 Technical Potential of Renewable Energy by Rural-Urban Classification

|   | Low-Density Rural | High-Density Rural | Urban |
|---|-------------------|--------------------|-------|
| Solar (kWh/m <sup>2</sup> /day)                             | 4.8               | 4.0                | 4.2   |
| Wind (1,000s of MW)   | 7.7               | 1.4                | 1.5   |
| Crop and Forestry Biomass (1,000s of dry tons/yr)           | 85.9              | 94.5               | 66.7  |
| Urban Wood and Mill Residues (1,000s of dry tons/yr)        | 20.3              | 33.0               | 46.0  |
| Animal Waste Residues (1,000s of dry tons/yr)               | 0.47              | 0.91               | 0.69  |
| Landfill and Wastewater Gaseous Biomass (1,000s of tons/yr) | 0.36              | 2.2                | 12.8  |

Note: Wind estimates exclude Alaska and Hawaii.

Source: Department of Energy (National Renewable Energy Laboratory).

There is also some evidence that certain types of renewable generation may be more labor-intensive than traditional power generation. For instance, CEA analysis suggests that a 100-megawatt concentrated solar plant may require up to seven times the number of workers necessary to operate a 100-megawatt combined cycle natural gas plant.<sup>18</sup> While the operation and maintenance of the power plant is similar to a conventional combined cycle plant, concentrated solar requires additional workers to maintain large solar fields. For instance, the mirrors must be washed frequently during summer months. Since these facilities will be disproportionately located in rural areas, this is expected to expand rural employment opportunities.

In addition to incentives to spur investment, both the Recovery Act and the President's proposed fiscal year 2011 budget increase funding for research and development for renewable energy, biofuels, and energy efficiency to help ensure that investments in these areas continue to contribute to future economic growth. For instance, of about \$2.5 billion to support energy research and development in the Recovery Act, \$400 million is allocated to the Advanced Research Projects Agency-Energy (ARPA-E). The President's fiscal year 2011 budget proposes adding another \$300 million in funding to this program. ARPA-E uses a highly entrepreneurial approach by funding potentially transformative technologies that "industry by itself is not likely to undertake because of technical and financial uncertainty" (U.S. Congress 2007). The proposed 2011 budget also includes \$220 million for biofuels and biomass research and development.

### *3. A Market-Based Approach to Controlling Greenhouse Gas Emissions Will Spur Generation of Renewable Energy in Rural America*

The President has included an economy-wide cap-and-trade program in his fiscal year 2011 proposed budget that reduces greenhouse gas emissions by more than 80 percent by 2050. The American Clean Energy and Security Act (ACES) that was passed by the House of Representatives last summer includes a cap on greenhouse gas emissions that is consistent with this goal, and the Senate is currently engaged in an effort to develop a bill.

---

<sup>18</sup> The CEA based this estimate on a variety of National Renewable Energy Laboratory (NREL) studies of direct permanent jobs associated with different types of electric generating plants. Much of the NREL data uses a particular example of a plant to generate estimates rather than a full representation over all different plant types, which could lead to a somewhat different estimate of the ratio of solar to natural gas jobs.

A cap-and-trade system limits total annual aggregate greenhouse gas emissions and requires that a firm hold an allowance for each ton it emits. Trading allows firms the flexibility to meet the cap at least cost. Based on two analyses, the CEA estimates that U.S. actions consistent with the President's emission reduction goals would reduce greenhouse gas emissions by approximately 110-150 billion metric tons (in CO<sub>2</sub> equivalents) cumulatively by 2050 (Environmental Protection Agency 2009; Paltsev et al. 2009).

A number of analyses find that renewables such as wind, solar, geothermal, and biomass will play an important role in meeting these long-term emission goals. For instance, in its analysis of the ACES legislation, the EIA projects that renewables will make up a substantial proportion of the new generation capacity added between 2012 and 2030, representing an almost 50 percent increase over what occurs without the legislation (Department of Energy 2009a). Further, the EPA estimates that generation from biomass and municipal solid waste will increase by 44 percent and generation from wind and solar will increase by almost 70 percent in 2030 relative to what occurs without the legislation (Environmental Protection Agency 2010).

As previously discussed, technical capacity for wind and solar is highest in less-densely-populated areas. Further, land is less expensive in rural areas. Consequently, increased reliance on these technologies will likely translate into a greater number of large-scale wind farms and concentrated solar plants in these communities. Furthermore, rural communities in particular will likely benefit from revenues from increased biomass production, since large quantities of fuel will require some conversion of existing land to growing feedstocks and the use of currently fallow lands for this purpose.

A common feature of a cap on greenhouse gas emissions is the flexibility to purchase offsets. Offsets allow emissions sources in covered sectors of the economy to purchase a reduction in emissions from a source that is not covered. Since greenhouse gases cause the same damage no matter where they are emitted, offsets offer the appealing prospect of achieving emissions reductions specified by the cap at lower cost. For a variety of reasons, the agriculture and forestry sectors are unlikely to be covered by a cap on greenhouse gas emissions, making them eligible for offsets. Offsets represent a potential new source of income for these sectors. A recent study by Baker et al. (2010) finds that the overall impact on U.S. farmers' net welfare of a market-based cap on greenhouse gas emissions consistent with the Administration's emission reduction goals is positive. The gains in farm income from higher output prices, increased bio-energy use, and demand for domestic offsets outweigh any increases in input costs.

### Box 3: Helping Households Cope with Energy Costs

The Department of Energy's Weatherization Assistance Program (WAP) sponsors energy efficiency upgrades for qualifying homeowners. The size of the program has increased in recent years – the total allocation for the 2009 fiscal year was \$250 million, and another \$5 billion has been allocated to states as part of the Recovery Act. Through this state-administered program, low-income families receive home weatherization services that allow them to save money on their future energy bills: the cap on average per-home expenditure under the Recovery Act increased from \$2,500 to \$6,500, most of which is paid for by the Federal government.

Table 9 demonstrates that, relative to their share of the overall population, rural residents receive a disproportionately high share of weatherization assistance. Though each state sets the criteria for the disbursement of weatherization services, the amount of Federal funding it receives depends on three factors: low-income population share, climatic conditions, and residential energy expenditures by low-income households. The Department of Energy (2009c) estimates that weatherization services reduce the average recipient household's annual energy bills by about \$350. Thus, it produces substantial savings that accrue directly to rural residents.

Table 9  
Distribution of Weatherization Assistance Program (WAP) Funds

|                    | Percent           |                  |                           |
|--------------------|-------------------|------------------|---------------------------|
|                    | Population (2008) | WAP funds (2008) | WAP funds in Recovery Act |
| Urban              | 84                | 64               | 66                        |
| High-density rural | 13                | 20               | 22                        |
| Low-density rural  | 4                 | 16               | 13                        |

Notes: Numbers may not sum to 100 due to rounding. For state subgrantees serving more than one county, the CEA assumes WAP funds are distributed equally to each county. The Recovery Act data go through April 2010.

Sources: Department of Energy (Office of Energy Efficiency and Renewable Energy). Department of Commerce (Census Bureau).

## C. New Opportunities in Recreation and Tourism

### 1. Background

America's Federal lands are precious national assets that are an important source of employment in rural areas through their support of the tourism industry. These lands – wildlife refuges, national parks, national forests, and Bureau of Land Management lands – are located disproportionately in rural areas. Recently, there have been more than 620 million annual visits to these lands, including over 310 million to national parks and wildlife refuges. The Department of the Interior estimates that its lands support over 320,000 jobs in tourism and recreation (Department of the Interior 2009). Recent studies estimate that the National Park Service alone annually contributes \$6.3 billion in labor income and \$9 billion in value added (Stynes 2009), the wildlife refuges provide an estimated \$1.7 billion in sales and \$542.8 million in employment income (Carver and Caudill 2007), and recreational visits to the National Forests contribute \$11.2 billion to GDP (Department of Agriculture 2010a).

America's Federal lands support a wide variety of activities. Every year, about 7 million anglers visit national wildlife refuges, as do 2 million hunters and many millions of birders (Carver and Caudill 2007). Of those surveyed on their national forest recreation visits, the

primary activities were hiking or walking, downhill skiing, viewing natural features, hunting, and fishing. Additionally, about 40 percent listed viewing wildlife as an activity in which they participated. Recreation and tourism on Federal lands is a growth industry, with the potential to increasingly benefit rural America. For example, the Department of Agriculture estimates that the number of visitors has increased at national forests from 134 million in 1964 to 206 million in 2007 (Department of Agriculture 2008, 2010b). Likewise, the number of recreation visits to the national parks has increased from 205 million in 1979 to 275 million in 2008.

Unfortunately, two problems – deferred maintenance and damaged ecosystems – prevent America’s Federal lands from reaching their full economic potential. In 2009, the Fish and Wildlife Service, Bureau of Land Management, National Parks Service, and Forest Service had a combined deferred maintenance project backlog of between \$16 and \$22 billion. The Forest Service estimates that 37 percent of its administrative facilities need major repairs or renovations (Department of Agriculture 2009). The failure to do needed maintenance leads to eroded roads, closed-off trails, and hazardous dilapidated buildings, and reduces the safety and accessibility of America’s Federal lands. In turn, this makes them less attractive tourist destinations.

Similarly, a legacy of damaged ecosystems has decreased the attractiveness of many Federal lands. Aside from the reduction in ecosystem services that these lands provide to the whole country, the harms to recreation and tourism take many forms. Whether through decreasing bird biodiversity that attracts birders, fish abundance that attracts recreational fishermen, the population of native species prized by amateur naturalists, or the quality and quantity of water available for water recreation, ecosystem degradation is harmful to tourism on Federal lands. For example, the Forest Service estimates that 25 million acres of its lands are at future risk from insects and diseases (Department of Agriculture 2009). Furthermore, a legacy of counterproductive fire suppression has led to an excessive build-up of combustible material on Federal lands, leading to more extreme wildfires which – aside from endangering surrounding communities – harm ecosystems and site facilities, keeping away visitors.

## *2. New Policies*

Through the Recovery Act, the Administration has increased investment on Federal lands, reducing the problems of deferred maintenance and ecosystem degradation and creating a stronger foundation for the future of rural tourism. Table 10 shows that the Recovery Act invests over \$2.3 billion to preserve and improve the accessibility and experience of America’s extraordinary Federal lands. Much of this spending goes disproportionately to rural areas; for example, the CEA estimates that 65 percent of Forest Service spending has been allocated to rural counties.<sup>19</sup> The funding is roughly evenly split between the Department of the Interior (National Park Service, Fish and Wildlife Service, and the Bureau of Land Management) and the Department of Agriculture’s Forest Service. To make parks and forests safer and more accessible, these funds will repair eroded trails and roads, close hazardous abandoned mines near tourist sites, build visitor facilities, and invest in many other assets. For example, the Forest Service is replacing unsafe and unhealthful bathrooms in Pike-San Isabel National Forest, in

---

<sup>19</sup> The CEA uses a dataset of Forest Service projects provided by the Department of Agriculture. For projects that covered multiple counties, the analysis allocates funding evenly across the counties.

rural Chaffee County, Colorado, responding to the number-one complaint received from forest visitors. To improve the natural capital that draws people to Federal lands, these funds will reforest, reduce hazardous fuel build-up, remove structures preventing fish from accessing spawning and feeding areas, and remove damaging invasive species. The Department of the Interior is funding the construction of water control infrastructure that will increase the wetlands available to migratory birds at Tule Lake, in rural Siskiyou County, California, which attracts one of the largest concentrations of migratory waterfowl in the world.

The President’s proposed fiscal year 2011 budget continues to support these types of investments through a variety of targeted programs. For instance, it proposes the establishment of a Forest Service pilot program for long-term, landscape-scale forest restoration activities that emphasize resiliency, health, and sustainable economic development. Likewise, the 2011 budget proposes to fully fund the ten-year average cost of fire suppression and additional discretionary funding if the ten-year average funding is exhausted due to excess wildfire activity. Finally, the 2011 budget includes funding for conservation on private and public lands. For instance, it proposes to fund the Wetlands Reserve Program at a level that will support the conservation of almost 200,000 additional acres of wetlands; a 67 percent increase in funding over 2010 to decrease nutrient loading in the Chesapeake Bay; funding for the installation of conservation practices on 1.5 million acres of priority landscapes, including the Bay-Delta region in California and the upper Mississippi River; and a 31 percent increase in funding for the Land and Water Conservation Fund to acquire and conserve landscapes and ecosystems that lack adequate protection and improve wildlife and public enjoyment on Federal lands.

Table 10  
Recovery Act Spending Benefiting Tourism on Federal Lands

| Type   | Spending (millions of dollars) |
|--|--------------------------------|
| National Parks   | 750                            |
| Fish and Wildlife Service                              |                                |
| Construction at Service Facilities                     | 227                            |
| Habitat Restoration                                    | 50                             |
| Bureau of Land Management                              |                                |
| Habitat Restoration                                    | 37                             |
| Abandoned Mine Land Remediation and Alaska Well Legacy | 53                             |
| Roads, Bridges, and Trails                             | 26                             |
| Construction and Deferred Maintenance                  | 42                             |
| Forest Service   |                                |
| Capital Improvement and Maintenance                    | 650                            |
| Wildland Fire Management                               | 500                            |
| <b>Total</b>   | <b>2,335</b>                   |

Sources: Recovery Act websites for Department of the Interior and Department of Agriculture (Forest Service).

In the short run, these investments provide jobs in rural communities that will help them weather the recession. In the long run, they will expand the opportunities for tourism-related businesses in rural America.

## IV. STRENGTHENING RURAL INFRASTRUCTURE

Strong infrastructure is critical to economic opportunity, standards of living, and social cohesion. But, because there are fewer people across whom to spread the costs, large infrastructure projects in rural areas tend to have much higher costs per household than comparable projects in urban areas. For that reason, the Federal government has a long history of supporting rural infrastructure. The Obama Administration is committed to continuing that support.

### A. Background

The Federal government's traditional support of rural infrastructure has focused on transportation, telecommunications, and energy and water infrastructure. This support has played a crucial role in linking rural residents economically and socially with the rest of the country and the world and in providing them with important basic services.

#### 1. Transportation

Of all the Federal efforts to tie Americans together, none is more tangible than the Federal-aid highway system. The Department of Transportation supports the construction and maintenance of important highway projects in all 50 states and has invested billions of dollars in highway construction and maintenance since the 1950s. About 65 percent of all interstate highway miles – and 70 percent of all Federal-aid highway miles – run through rural areas.<sup>20</sup> These highways allow rural Americans to sell their products in key markets throughout the country and the world. Beyond highways, Federal programs also support the rail, barge, and ocean-going transportation infrastructures.

Without this key infrastructure, the crops grown in rural America could not as easily reach the domestic and international markets that sustain farm income. Since less than 1 percent of agricultural products are sold directly to consumers, farmers rely on Federal and state highways to access key processing and marketing/distribution networks. A recent study in Iowa indicated that meat and produce had to travel an average of more than 1,500 miles from production to consumption (Pirog et al. 2001).

#### 2. Telecommunications

While the Postal Service has long been the primary vehicle for sending goods and written communications in the United States, the Federal government has also played a crucial role in ensuring access to telecommunications in rural areas, with the same goal of connecting Americans to one another. Today, all telecommunications carriers that provide interstate or international service contribute to the Universal Service Fund (USF), often through a service fee on their bills. Contributors paid about \$7.3 billion into the Fund in 2009, and this revenue was used to support a range of programs designed to promote universal access to essential communications services at reasonable rates. For example, the USF's Rural Health Care

---

<sup>20</sup> The Department of Transportation's definition of urban differs from that of the CEA, so this statistic could not be calculated using CEA's definition of urban and rural.

program subsidizes telecom and internet services for rural health care providers. Additionally, the Department of Agriculture's Rural Utilities Service (RUS) provides loans to fund traditional telecommunications infrastructure and voice telephone service.

### *3. Energy and Water Infrastructure*

As part of the New Deal, the Roosevelt Administration sought to bridge the urban-rural divide in access to electricity. In the early 1930s, according to one estimate, 90 percent of Americans in urban areas had access to electric power, while only 10 percent of rural America had access (Deller et al. 2009). The establishment of the Rural Electrification Administration (REA) in 1935 sparked a series of Federal investments that brought power to rural American homes over the coming years. By 1939, the REA had helped to establish more than 400 rural electric cooperatives, which served nearly 300,000 households. Today, the RUS continues to provide credit and other assistance to help improve electric, water, and telecommunications services in rural areas. For example, between 2002 and 2009, the RUS invested \$36 billion in electric systems and \$14 billion in water and waste management systems throughout rural America.<sup>21</sup>

The Federal government also has a long history of helping to build key water infrastructure projects in rural areas. For example, the Clean Water and Drinking Water State Revolving Funds provide matching grants for community and regional water systems. The two funds each have provided about \$70 billion dollars over the last twenty years for wastewater treatment plants, estuary improvement projects, and drinking water treatment, storage, transmission and distribution infrastructure, many of which benefit rural areas. The Department of the Interior's Bureau of Reclamation also provides hydropower, and drinking water and irrigation services to rural America. Today, the Bureau is the nation's largest wholesaler of water, serving 31 million people, and provides irrigation to one out of five western farmers.

## **B. Continuing Infrastructure Investment**

The Administration is committed to continued support of rural community infrastructure needs. As laid out in the proposed fiscal year 2011 budget, the Administration is pursuing a comprehensive region-based approach that coordinates infrastructure investments across transportation, housing, and other critical areas. The Administration is also supporting the build-up of the country's energy infrastructure – discussed in Section III – to facilitate the use of cleaner, bio-based fuels. In this section, we discuss two other areas of significant infrastructure investment: the expansion of broadband internet service to rural communities, and improvements in the efficiency and availability of water resources.

### *1. The Administration's Rural Broadband Strategy*

Only about 70 percent of rural households with internet access had a high speed broadband connection in 2007, compared with 84 percent of urban households. This difference in broadband adoption is not just a consequence of income differences. Even when rural and urban

---

<sup>21</sup> Estimate provided by the staff of the Department of Agriculture, April 2010.

households are matched by income, broadband connections are less prevalent among rural households. Much of the difference between rural and urban broadband subscribership reflects availability: residents of some rural areas have no terrestrial broadband internet service providers, and other areas are served by only a single provider and therefore have no competition.

The Administration has made a priority of accelerating the rollout of broadband internet service to rural America. The most important vehicles for accomplishing this goal are monies authorized in the Recovery Act for providing loans, grants, and loan-grant combinations to expand access to broadband in rural and underserved areas of America. For instance, the Department of Agriculture's Rural Utilities Service will use billions to support loans and grants that facilitate broadband deployment in rural areas, with the objective of funding projects that will support rural economic development and job creation beyond the immediate construction and operations of the broadband facilities. The Department of Commerce's National Telecommunications and Information Administration was given \$4.7 billion for its Broadband Technology Opportunities Program to deploy broadband infrastructure in unserved and underserved areas (many of which are rural), expand public computer center capacity, and encourage sustainable adoption of broadband service. And the Administration intends to support broadband expansion in rural America beyond the Recovery Act. For instance, the Administration has included \$690 million for direct loans in telecommunications and \$418 million for loans and grants to help transition rural economies into the modern information economy in its proposed fiscal year 2011 budget.

There are several reasons that expanded broadband service is important for employment and income growth in rural areas. Most employment growth in the United States over the last several decades has been in the service sector, where jobs are particularly likely to benefit from broadband access. Broadband service may allow rural areas to compete for a range of service jobs, from call centers to software development. And even in non-service industries, internet tools can help businesses connect more efficiently with customers and suppliers. For instance, American farmers can use the internet to track product prices, obtain weather forecasts, buy and sell commodity futures, track the progress of supplies ordered or products shipped, and find markets for specialty farm products. Broadband internet connections also are increasingly useful as a substitute for business travel.

Broadband-enabled employment is valuable in rural areas not only for the income opportunities it provides, but also because it helps further diversify local economies. Broadband internet access enables employment that is both flexible and untethered to local economic conditions. One example of how broadband access can diversify income sources is through home businesses, which are substantially more common in rural areas than urban ones. Broadband service helps rural businesses find markets that otherwise might be unavailable to them, facilitates online ordering and billing, and integrates the rural economy with the rest of the country (and the world) more effectively than is possible over slow-speed internet connections. It also allows continued access to online training and education.

Finally, broadband service expands opportunities for improving the provision of medical and health services for rural populations. More accessible health information, products, and services

confer real economic benefits to rural communities and their residents. One study of hospitals in 24 rural communities found that the benefits of telemedicine include savings from outsourcing of procedures, transportation savings for patients who were able to obtain services electronically from their local hospital rather than traveling to a distant specialist, and income savings to patients from reductions in missed work (Whitacre 2008).

## *2. Increasing Water Efficiency and Availability*

The Administration is committed to investing in infrastructure to improve the efficiency and availability of water in rural America. Rural areas suffer from multiple problems associated with their water infrastructure. First, aging infrastructure loses much of the water in transit, reducing availability and increasing cost. Second, water systems have been slow to adopt new technologies for the efficient allocation of water, such as tiered pricing or water trading mechanisms. Third, some rural areas lack access to clean, reliable drinking water.

Water availability is important for many reasons. In the agriculture sector, for instance, roughly 15 percent of U.S. farm land – producing crops worth about \$70 billion annually – is irrigated. Many other industries also rely on clean water for manufacturing products or cooling machinery, making access to usable water an economic imperative for businesses. Investments in water and wastewater facilities also yield returns to public health and the environment by treating billions of gallons of wastewater each day before it is released into rivers, lakes, and oceans, making water safe for use by humans, wildlife, and plant life. Economic assistance to rural communities for investments in water availability is especially valuable, given the borrowing constraints that small or poor communities may face.

Recognizing these potential benefits, the Administration is making several efforts to upgrade and improve the efficiency of existing water infrastructure. Already, the Recovery Act has provided more than \$130 million for high-priority infrastructure repair and replacement across Bureau of Reclamation sites. The WaterSMART Program, provided with \$40 million by the Recovery Act and additional funding in the proposed fiscal year 2011 budget, invests in infrastructure that encourages a variety of market-based conservation measures, including water banks and the reuse of treated wastewater. Such initiatives ensure that those who most need the water receive it and can provide a source of revenue to farmers. Other projects will reduce leakage by, for example, lining canals with reinforced concrete. Furthermore, the Administration has invested in the reuse of wastewater and impaired waters with \$135 million in the Recovery Act and additional funds in the proposed fiscal year 2011 budget. Finally, the Department of Agriculture's Office of Environmental Markets, which will encourage private investment in activities from carbon sequestration to biodiversity conservation, will support emerging markets for water quality.

In addition to regular appropriations, the Administration is addressing the unavailability of clean, safe drinking water in some rural areas through Recovery Act funding. The Recovery Act included approximately \$3.7 billion in loans and grants for rural water and wastewater infrastructure through the Department of Agriculture's Rural Development Water and Waste Disposal loan and grant program. It also includes \$290 million in funding across various agencies for construction of rural water projects, emphasizing water supply and water treatment

plants; at least 30 percent of these funds are targeted to American Indian and Alaska Native communities. The result is that young children in rural areas in states such as Montana, North Dakota, and South Dakota will have increased access to safe water, improving their health and future life outcomes.

## **V. IMPROVING AMERICA'S SUPPORT OF AGRICULTURE**

Agriculture remains central to the lives and livelihoods of rural Americans, and the U.S. agricultural sector is one of the most productive in the world. The Administration's policies for the rural economy seek to support American agriculture, further enhance its productivity, and continue to protect farmers from large fluctuations in yields and prices. This section discusses three types of policies the President has proposed to strengthen American agriculture: expanding overseas market access, better targeting of farm support programs, and promoting local and regional food systems.

### **A. Opening Markets to U.S. Agricultural Exports**

As part of the Administration's National Export Initiative, the President has called for further measures to open foreign markets to American products. A key beneficiary of such expanded opportunities will be American agriculture, which is extremely competitive in international markets.

The President recently called for concluding the Doha round of trade negotiations, a large component of which is related to opening up agricultural markets around the world. This would require countries to reduce protective tariffs and distortive subsidies in their agricultural sectors. More open trade allows the highly productive U.S. agricultural sector to export its products more easily. Further, the United States tends to have lower barriers to trade than many other countries. As discussed previously, the change in access that has resulted from previous free trade agreements has often been bigger for U.S. exporters than importers into the United States. An agreement such as this would allow the United States to reform policies that have been in some cases ruled noncompliant with the World Trade Organization (such as the subsidies for cotton). Having subsidies that are ruled illegal can cause damage to the industry and other sectors as other countries are allowed to impose retaliatory tariffs on U.S. goods.

Finally, as discussed in Box 4, the Administration is working to promote fair competition in agriculture not only internationally, but also at home.

#### **Box 4: Ensuring Competition in the Agricultural Sector**

The Administration is committed to protecting fair and open competition and enforcing antitrust laws in the agricultural sector. The Department of Justice and the Department of Agriculture are holding five public outreach workshops in 2010 to solicit public input on the state of competition, regulation, and consolidation in the agricultural industry. One aim of these workshops is to foster dialogue and ensure that a wide variety of viewpoints are heard on issues such as the impact of agriculture concentration on food costs, how patents and intellectual property affect agricultural marketing and production, and increasing retailer concentration. The first such event, held in Iowa in March, drew hundreds of farmers, ranchers, and industry leaders, who participated in a vigorous discussion about competition in markets ranging from seeds to livestock. Four more workshops have already been scheduled in 2010 to focus specifically on the poultry, livestock, and dairy markets.

### **B. Reforms to Existing Farm Support Programs**

The Federal government initiated programs to support farm income in 1933 as part of the New Deal. This first incarnation of Federal support took the form of payments to farmers who let a portion of their fields lie fallow to reduce crop supply and raise the price of farmed goods. The initial program spawned an array of other programs specifically targeted to the agricultural sector, including commodity price supports and production controls, marketing orders to limit competition, import barriers, and crop insurance.

Since that time, Federal support for agriculture has evolved away from programs that pay farmers not to farm toward less distorting fixed direct payments based on a farm's historic production. In addition, current Federal support includes countercyclical payments to help protect farmers against changes in current prices, programs that subsidize loans or provide the financial benefits of a loan when commodity prices are low, crop insurance at subsidized rates, and disaster- and revenue-based programs. Finally, the government provides conservation payments to farmers who set aside environmentally-sensitive land or adopt conservation practices on land that they farm. Payments to farmers of specific crops or animal products constituted about 70 percent of all direct farm support in 2008.<sup>22</sup> Of this amount, corn producers received about 29 percent, followed by upland cotton with 25 percent, 15 percent for tobacco, 14 percent for wheat, 7 percent for soybeans, and 5 percent for rice.

Figure 10 tracks trends in total agricultural employment and farm support payments since 1948.<sup>23</sup> The farm support series is smoothed across three years and includes both direct payments and subsidies for crop insurance. Although there has been substantial variation due to price and yield shocks, two patterns are evident: the number of people employed in the agricultural sector has consistently declined, while total farm support (in 2008 dollars) has tended to increase. That said, farm support has been generally declining since 2000: the total level of farm support has fallen from about \$43 billion in 2000 to about \$21 billion in 2009. This

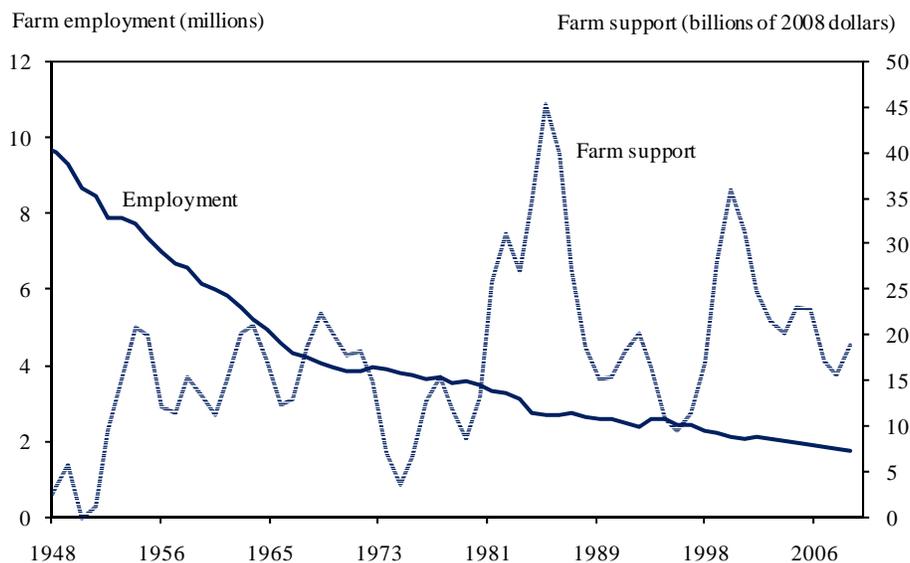
---

<sup>22</sup> The credit provided to blenders of renewable fuels is not included in this amount.

<sup>23</sup> Farm employment consists of self-employed and unpaid family workers, and full-time and part-time wage and salary workers. Thus, farm employment includes workers who do not statutorily receive payments (for example, wage workers), and some who receive payments are not included (for example, retired farmers who still receive direct payments).

trend appears to be driven largely by high commodity prices due to high foreign demand for U.S. agricultural products and the growing biofuels market. Subsidy rates for most direct payment programs between the 2002 and 2008 Farm Bills remained largely unchanged.

Figure 10  
Farm Employment and Farm Support



Notes: 2009 employment is estimated by the CEA. Farm support is smoothed across three years.  
Sources: Department of Commerce (Bureau of Economic Analysis), National Income and Product Accounts, Table 6.4; Department of Labor (Bureau of Labor Statistics), Current Employment Survey; Department of Agriculture (Risk Management Agency and Economic Research Service), Special tabulation and Budget Table 35.

The Administration’s proposed fiscal year 2011 budget includes a number of reforms to existing Federal support for the agricultural sector. First, to better target payments, it proposes more stringent income eligibility requirements to preclude the wealthiest farmers from receiving payments.<sup>24</sup> Currently, farms with \$500,000 or more in sales receive 38 percent of subsidies, although they account for only 4 percent of farms.<sup>25</sup> In the Administration’s budget, after being phased in over three years, farmers with a farm-adjusted gross income (AGI) over \$500,000 or nonfarm AGI over \$250,000 would no longer be eligible for direct payments. Second, it proposes reforming the crop insurance program to reduce windfall profits enjoyed by private companies that supply reinsurance. The crop insurance program has grown dramatically since it began in 1981, from \$18 million to \$7 billion in 2009 (all in 2008 dollars). This change to the crop insurance program is projected to save \$8 billion over 10 years. Together, these reforms ensure that the Federal government will continue to provide a safety net to farmers while freeing up resources that can then be directed toward other priorities.

<sup>24</sup> As Secretary Vilsack testified, “Recognizing the need to reduce the deficit, the budget proposes to better target direct payments to those who need and can benefit from them most as well as cap total payments paid to larger operations.” The budget also “reflects savings expected to be achieved through reforms in the Federal crop insurance program. The changes we are proposing will help protect farmers from higher costs, rein in costs for taxpayers, improve access to crop insurance and provide greater protection from crop losses” (Vilsack 2010).

<sup>25</sup> This is calculated from tabulations at [www.ers.usda.gov/Briefing/FarmIncome/govtpaybyfarmtype.htm](http://www.ers.usda.gov/Briefing/FarmIncome/govtpaybyfarmtype.htm) using data from the 2007 Department of Agriculture’s Agricultural Resource Management Survey.

### **C. Promoting Local and Regional Food Systems**

The Administration is promoting the development of local and regional food systems that deliver fresh food to consumers who live in close proximity to farms. Local food systems promote healthful living through increased availability of fresh food to underserved areas and the provision of better information on where food was grown. Locally grown food also may have greater nutrition value, since it does not have to be picked as early or treated to maintain freshness for transport to distant places. Finally, local food systems may reduce income variability and increase the share of the final product price that goes to farmers.

Several programs support this goal. Department of Agriculture initiatives such as Know Your Farmer, Know Your Food support local food systems and help consumers make better-informed decisions about their food. This particular initiative assists schools participating in school nutrition programs to purchase more locally grown foods where possible. The First Lady has also been involved in promoting healthy food initiatives, many of which emphasize the importance of local, healthy food production. For example, a key focus of her Let's Move! campaign is to help ensure that all families have access to healthy, affordable food in their local communities. Meanwhile, the President's proposed fiscal year 2011 budget includes the Healthy Food Financing Initiative, a new program designed to provide grants to bring farmers' markets and fresh foods into underserved communities. Three separate departments – Treasury, Agriculture, and Health and Human Services – are collaborating on this initiative, which will invest up to \$400 million annually.

## **VI. INVESTING IN THE EDUCATION AND HEALTH OF RURAL COMMUNITIES**

A centerpiece of the Administration's policies for rural America is its effort to strengthen the rural workforce and improve the quality of life for rural Americans. As described in Section II, there are significant gaps in educational attainment and in the quality and availability of health care between rural and urban communities. These gaps arise in part because rural areas face several unique challenges in achieving high-quality education and health care. First, the recruitment of high-quality teachers and health care professionals may be more challenging; for example, rural professionals often face lower pay and difficult working conditions. Second, because of lower population densities, it is harder for rural areas to support specialized classes in their schools, such as vocational and advanced classes, and specialized health care providers, such as experts in the treatment of relatively unusual conditions. And third, the fact that rural students are often far from institutions of higher education makes it more costly for them to attend school beyond high school (Card 1995), and the fact that rural residents are often far from hospitals makes it more difficult for them to obtain timely, high-quality medical care.

The Administration is working to help rural communities overcome these challenges, and in doing so, to close the gaps with urban areas. These efforts are being conducted through the Recovery Act, which is funding a range of programs strengthening rural education and health care; through health care reform, which may prove particularly beneficial to rural America; and other measures.

## A. Education

Much of the Administration's support for rural education comes from the Recovery Act. Given the greater educational challenges of rural areas, the education funding in the Act is likely to be particularly important in these communities. The Recovery Act's State Fiscal Stabilization Fund is already directly providing approximately \$7 billion for education in rural communities as a down payment on the President's broader goal of creating a more educated rural workforce.<sup>26</sup> This spending is likely to have short- and long-run benefits. For example, direct reporting to the Department of Education indicates that education spending from the Recovery Act has already helped save or create hundreds of thousands of teacher and other education positions, reducing the damage of this recession to the human capital of rural communities and the rest of the country. Economic research suggests that the increases in class size that would have resulted from laying off teachers would have harmed student achievement (Card and Krueger 1992; Angrist and Lavy 1999; Krueger 1999).

Several other provisions of the Recovery Act hold the promise of improving educational quality in rural communities and around the country. The \$9.45 billion provided by the Recovery Act to the whole country for the Race to the Top Fund, the Investing in Innovation Fund, Teacher Incentive Fund, State Educational Technology Grants, Statewide Longitudinal Data Systems, and Title I School Improvement Grants offer the promise of substantially improving the quality of education in both urban and rural areas.

Another component of the Recovery Act is investing in workers' skills. The CEA estimates that, because of the Recovery Act, the Department of Labor is spending an additional \$650 million in rural areas on Workforce Investment Act programs, which provide job training and related services.<sup>27</sup> Additionally, the Bureau of Indian Affairs received \$19 million for workforce training, including on-the-job training in construction in American Indian Areas.

A final important component of the Recovery Act is its investment in education through the Bureau of Indian Affairs. The Recovery Act provides nearly \$280 million in funds for school construction on Bureau of Indian Affairs lands. A recent study suggested that households in California value schools at 150 percent the cost of building them, offering suggestive evidence of a high benefit-cost ratio for this type of investment (Cellini, Ferreira, and Rothstein 2010).

Rural communities will also benefit from the President's proposed American Graduation Initiative. This initiative funds a new online skills laboratory, which will provide free high-quality courses online, especially benefiting rural areas. Teams of experts in subject areas as well as in pedagogy and technology will develop courses, which can then be modified, adapted, and shared, and then made available for free online. Funding from the Recovery Act to develop rural broadband will be important in extending access to these courses to rural communities.

---

<sup>26</sup> This figure is calculated by taking the 81.8 percent of the \$53.6 billion State Fiscal Stabilization Fund that must be allocated toward education and assuming that the money is disbursed to counties in the same proportions as it is disbursed to states, on the basis of total population and school-age population.

<sup>27</sup> This internal CEA calculation assumes that rural areas receive an amount proportional to population of the \$3.95 billion in Recovery Act funding for Workforce Investment Act programs.

## **B. Health**

### *1. Funding for Health Care during the Recession*

The high unemployment during the recession has reinforced the importance of access to coverage for those who have lost their jobs, and thus cannot obtain employer-sponsored health insurance. Indeed, the fraction of Americans without health insurance climbed during the recession as individuals lost employer-sponsored health insurance coverage. Rural areas were no exception to this trend. While the overall rate of uninsurance in rural areas is similar to that in metropolitan areas, as described above, rural residents are more dependent on public coverage – through Medicare, Medicaid, and other programs such as the Indian Health Service – compared with urban areas.

The Recovery Act contains measures that address the immediate needs of rural families affected by the recession and invests in its health care infrastructure and workforce to meet its longer term needs. Between 2009 and 2019, the Recovery Act will add nearly \$90 billion in Federal support for Medicaid through higher matching rates for states. The Recovery Act has been critical to bolstering the Medicaid program as enrollment nationwide rose by nearly 6 million during the recession and its aftermath. This support is especially important for rural areas, which have a higher fraction of their population enrolled in Medicaid. The Recovery Act also provided subsidized COBRA continuation coverage – paying for 65 percent of premium costs – to allow workers who lost jobs during the recession to extend health insurance coverage for themselves, their spouses, and their dependents. Through the Supplemental Nutrition Assistance Program (SNAP, previously known as the Food Stamp Program) administered by the Department of Agriculture, the Recovery Act provided about \$20 billion in support for better nutrition and food security, benefiting both rural and urban regions.

Beyond strengthening the safety net, the Recovery Act makes investments in the rural health care workforce and infrastructure to address difficulties in accessing primary care, doctors, and hospitals. The Recovery Act devotes funds to help nurses repay their loans, and encourages recent health profession graduates to enter primary care. The Act also makes an enormous investment – nearly \$26 billion – to accelerate the adoption of health information technology that will, among other things, fund grant programs to help rural areas cope with the unique difficulty that their residents face in accessing doctors and hospitals. For example, this includes funding for telehealth and network infrastructure to help patients interact with providers without being subject to the constraints of geography and distance (see Box 5).

The President's budget proposal for fiscal year 2011 builds on the Recovery Act's support for strengthening public coverage critical to rural areas by investing in programs that address the unique concerns of these regions. For instance, the budget continues the Recovery Act's support for American Indians and Alaska Natives, with \$4.4 billion to support the Indian Health Service. It also includes an initiative to improve the performance and financial stability of rural hospitals as well as to increase the number of health care providers in rural counties and strengthen regional and local partnerships among them. The budget provides \$2.5 billion for health centers in underserved areas, which will help to improve primary and preventive care in rural regions. Finally, it expands support for physicians and other health care professionals entering primary

care by helping providers who work in a medically underserved community repay their student loans.

## *2. Health Insurance Reform*

The Patient Protection and Affordable Care Act signed into law by the President in March builds on the Recovery Act by expanding coverage, containing health care costs, and regulating health insurance markets. The new law contains important specific provisions that address the challenges of affordability and difficulty accessing care in rural regions.

As described earlier, a significantly higher percentage of rural families pay more than 10 percent of their income on health insurance compared with urban families; these families will benefit from the expansion in coverage. In the bill signed by the President, families with incomes up to 400 percent of the Federal poverty level (\$88,200 for a family of four in 2009 and 2010) who are uninsured or without access to affordable employer-sponsored health insurance coverage will be eligible for subsidies to purchase coverage through an exchange that caps premiums and out-of-pocket spending at a fixed percentage of income. A Kaiser Family Foundation analysis found that a family of four with an annual income of \$38,600 (175 percent of poverty) in 2009 would receive assistance in purchasing coverage totaling around \$7,450 and pay a maximum of only about 5 percent of its income on health insurance premiums. These subsidies will substantially increase health insurance coverage among individuals and families in rural areas (Kaiser Family Foundation 2010).

As private insurance coverage has eroded, many rural families have turned to the essential safety net of public coverage to guarantee access to needed medical care. Reform legislation also strengthens this critical safety net. The law will expand Medicaid coverage to all non-elderly individuals at or below 133 percent of the poverty line. Similarly, it will strengthen Medicare by enacting delivery system reforms that ensure quality and efficiency, and will eliminate unnecessary overpayments to private insurers. An additional benefit of this latter set of reforms is that it will lower the growth rate of Part B premiums for Medicare recipients, which more than doubled from 2000 to 2010.

The new health insurance reform law also contains several specific provisions to meet critical health care workforce needs and improve the health care infrastructure of rural areas. Confronting the more than twofold difference in the concentration of doctors between rural and urban areas, the legislation contains loan repayment and other incentive programs to encourage medical providers to enter primary care and work in areas with professional health shortages or that are medically underserved. The law also builds on the Recovery Act's support for the rural medical workforce by expanding graduate medical education positions in rural teaching hospitals and by supporting training for doctors and nurses in rural health care. It also requires the Medicare Payment Advisory Commission to review payment adequacy for rural health care providers serving the Medicare program. In the area of infrastructure support, the law contains specific protections for rural areas that maintain payments for hospitals that are the sole sources of coverage in their community, extends demonstration programs that analyze reimbursement practices at rural hospitals, and builds on the Recovery Act by directing the newly created Center for Medicare and Medicaid Innovation to consider rural telehealth expansions.

The escalation of health care costs threatens rural families by making health care even less affordable over time. Independent analysts and business groups agree on the potential of reform to rein in health care cost inflation over time. An analysis by the CEA found that health insurance reform has the potential to reduce the growth rate of health care costs by 1 percentage point across the private sector and in Medicare and Medicaid (Council of Economic Advisers 2009).<sup>28</sup> Reducing the annual growth rate of health care spending by this amount would yield large gains in affordability for American families. For a typical family of four, slowing premium growth by this rate implies that income in 2030 would be higher by several thousand dollars, relative to what it otherwise would have been.

These gains in income would especially help families in rural areas, who currently face higher payments as a percentage of income for health insurance. Because employers substitute between wages and health benefits in compensating their employees, containing the growth rate of costs means that employers will pay a larger portion of overall compensation as wages rather than health insurance premiums. The benefits of cost-containment also extend to retirees in rural areas, who will be able to keep a larger portion of their Social Security payments as the growth rate of Medicare Part B premiums slows.

By increasing affordability, strengthening the safety net, and tailoring provisions to meet the needs of rural areas by investing in primary care and critical community hospitals, health insurance reform will provide security and stability that reverses the growing challenges posed by the status quo for rural health care. These changes will produce a healthier population in rural America and allow its residents to devote their resources to other activities, including making investments in education, new businesses, and other areas.

---

<sup>28</sup> The CEA analyzed the House and Senate health-insurance reform legislative proposals as of December 2009. The version signed into law was amended based on the Senate legislation. While the legislative changes affect short-run projections of savings resulting from reform, its long-run measures to control costs in the public and private sector are largely the same as the earlier version of the legislation analyzed by the CEA.

### **Box 5: Encouraging Innovation in Rural America**

A common theme in the Administration's policies for growing a robust rural economy is innovation. The Administration is encouraging the creation of new online skills laboratories to increase access to education. Increased broadband availability will increase education and business opportunities in rural areas. In the area of clean energy, the renewable fuels standard is expected to bring nascent advanced biofuels into the marketplace, and ARPA-E is funding early stage energy research. The Administration is also investing in new technologies to improve water allocation. Here we highlight three specific programs at the forefront of the Administration's rural strategy that promote innovation: telehealth, which will increase access to quality health care in rural communities; agriculture and food research, which will foster innovation in several priority areas; and regional innovation clusters, which will facilitate business and community development.

Telehealth – using telecommunications technologies such as internet video and mobile phones to deliver health-related services remotely – can allow for the coordination of care between doctors and patients, and with other care providers such as nurses and pharmacists, without regard to distance. For example, telemedicine systems can allow remote monitoring of intensive care unit patients from a central location during after-hour shifts, and remote examination of children by primary care providers. Through the Recovery Act and other grant initiatives, the Administration is making substantial investments in programs that extend this healthy and potentially life-saving technology to rural areas. The Federal Communications Commission recently announced a commitment of \$191 million to 22 broadband telehealth networks that will link hundreds of hospitals regionally in more than 15 states. Recently passed health reform legislation will build on these investments by directing the newly created Center for Medicare and Medicaid Innovation to consider rural telehealth expansions.

The proposed fiscal year 2011 budget increases funding for several research and extension programs by over \$180 million. These programs are designed to spur new innovation and, in so doing, maintain the long-term prospects for American agriculture through improvements in productivity and food safety. For instance, the Agriculture and Food Research Initiative will achieve its highest level ever to support competitive, peer reviewed grants to researchers with an eye toward supporting research in several areas that are priorities for the Administration such as childhood obesity, food safety, climate change, and bioenergy.

The Administration is also seeking to promote economic opportunities through regional innovation clusters. The Administration includes in its proposed fiscal year 2011 budget the Rural Innovation Initiative, for which the Department of Agriculture will set aside up to 5 percent of its funding from approximately 20 different programs and then allocate this funding competitively to regional pilot projects geared toward local needs. This initiative will raise roughly \$280 million in loans and grants to promote a coordination of projects and is designed to make the regions more attractive for business development. In March of this year, the Department of Agriculture requested proposals through its Rural Business Opportunity Grant program, which provides technical assistance to rural communities. This grant focuses on funding regional (or multi-jurisdictional) collaboration that incorporates some aspect of the Administration's broader rural objectives, such as promoting local and regional food systems, producing biofuels or renewable energy, spreading broadband, or innovatively using natural resources to generate business opportunities.

## VII. CONCLUSION

The history of rural America is one of proud accomplishment. American agricultural productivity is among the very highest in the world and agricultural products are important exports. Rural America also contributes to the production of U.S. goods and services in many other sectors including manufacturing, services, government, and wholesale and retail trade. The President is committed to ensuring that the future of rural America is as distinguished as its past.

The Administration is actively taking steps to put rural Americans on a path toward greater prosperity through a wide range of policies. One set of policies seeks to promote rural businesses and further the diversification of the rural economy by helping rural small business, fostering rural areas' role in leading the clean energy transformation, and encouraging rural recreation and tourism. Other policies are providing crucial investments in rural infrastructure in telecommunications, water distribution, and other areas. To promote the continued vitality of American agriculture, the Administration is working to open foreign markets, improve farm income support programs, and promote local and regional food systems. The Administration is also working to strengthen the rural labor force through initiatives in education and healthcare.

Crucial steps to strengthening the rural economy are already being taken through the Recovery Act and other policies. These steps include investments in areas ranging from health information technology and education to infrastructure and small business loans; comprehensive health insurance reform that will have large benefits for rural communities; and much more. The Administration is committed to building on these unprecedented measures in the months and years to come.

## REFERENCES

- Angrist, Josh, and Victor Lavy. 1999. "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement." *Quarterly Journal of Economics* 114, no. 2: 533-575.
- Autor, David H., and Mark G. Duggan. 2006. "The Growth in the Social Security Disability Rolls: A Fiscal Crisis Unfolding." *Journal of Economic Perspectives* 20, no. 3: 71-96.
- Baker, Justin S., et al. 2010. "The Effects of Low-Carbon Policies on Net Farm Income." Working Paper. Duke University, Nicholas Institute for Environmental Policy Solutions (February).
- Card, David. 1995. "Using Geographic Variation in College Proximity to Estimate the Return to Schooling." In *Aspects of Labour Market Behaviour: Essays in Honour of John Vanderkamp*, edited by Louis N. Christofides, E. Kenneth Grant, and Robert Swindinsky, pp. 201-222. University of Toronto Press.
- Card, David, and Alan Krueger. 1992. "Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States." *Journal of Political Economy* 100, no. 1: 1-40.
- Carver, Erin, and James Caudill. 2007. "Banking on Nature 2006: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation." Division of Economics, Fish and Wildlife Service. September.
- Cellini, Stephanie Riegg, Fernando Ferreira, and Jesse Rothstein. 2010. "The Value of School Facility Investments: Evidence from a Dynamic Regression Discontinuity Design." *Quarterly Journal of Economics* 125, no. 1: 215-261.
- Chan, Leighton, L. Gary Hart, and David C. Goodman. 2006. "Geographical Access to Health Care for Rural Medicare Beneficiaries." *Journal of Rural Health* 22, no. 2: 140-146.
- Cosby, Arthur G., et al. 2008. "Preliminary Evidence for an Emerging Non-Metropolitan Mortality Penalty in the United States." *American Journal of Public Health* 98, no. 8: 1470-1472.
- Council of Economic Advisers. 2009. "The Economic Case for Health Care Reform: Update." December.
- \_\_\_\_\_. 2010. "The Economic Impact of the American Recovery and Reinvestment Act of 2009." Third Quarterly Report to Congress. April.
- Deller, Steven, et al. 2009. *Research on the Economic Impact of Cooperatives*. Madison, WI: University of Wisconsin Press.

- Department of Agriculture (Forest Service). 2008. "National Visitor Use Monitoring Results: National Summary Report." October.
- \_\_\_\_\_. (Office of Inspector General). 2009. "Audit Report: Forest Service's Financial Statements for Fiscal Years 2009 and 2008." 08401-10-FM.
- \_\_\_\_\_. (Forest Service). 2010a. "Forest Service Recreation Contributes to the National Economy." ([www.fs.fed.us/recreation/GDP\\_Q&A\\_Final.pdf](http://www.fs.fed.us/recreation/GDP_Q&A_Final.pdf)).
- \_\_\_\_\_. (Forest Service). 2010b. "National Forest Recreation Use: 1924-1996." April (Accessed). ([www.fs.fed.us/recreation/programs/facts/use/rec\\_use\\_1924-96.pdf](http://www.fs.fed.us/recreation/programs/facts/use/rec_use_1924-96.pdf)).
- Department of Energy (Energy Information Administration). 2009a. *Energy Market and Economic Impacts of H.R. 2454, the American Clean Energy and Security Act of 2009*. SR-OIAF/2009-05.
- \_\_\_\_\_. (Energy Information Administration). 2009b. *An Updated Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook*. SR-OIAF/2009-03.
- \_\_\_\_\_. (Office of Energy Efficiency & Renewable Energy). 2009c. "Weatherization Assistance Program – The American Recovery and Reinvestment Act of 2009." ([www1.eere.energy.gov/wip/pdfs/wap\\_arra\\_factsheet.pdf](http://www1.eere.energy.gov/wip/pdfs/wap_arra_factsheet.pdf)).
- Department of Health and Human Services (Indian Health Service). 2006. "Facts on Indian Health Disparities." January. ([info.ihs.gov/Files/DisparitiesFacts-Jan2006.pdf](http://info.ihs.gov/Files/DisparitiesFacts-Jan2006.pdf)).
- \_\_\_\_\_. (Centers for Disease Control and Prevention). 2009. *Summary Health Statistics for the U.S. Population: National Health Interview Survey, 2008*. Vital and Health Statistics Ser. 10, No. 243. National Center for Health Statistics. December.
- Department of the Interior. 2009. "Economic Impact of the Department of the Interior's Programs and Activities: Preliminary Report." December.
- Dimitri, Carolyn, Anne Effland, and Neilson Conklin. 2005. "The 20<sup>th</sup> Century Transformation of U.S. Agriculture and Farm Policy." Economic Information Bulletin No. 3. Department of Agriculture, Economic Research Service. June.
- Environmental Protection Agency. 2009. "EPA Analysis of the American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress." June.
- \_\_\_\_\_. 2010. "Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis." EPA-420-R-10-006.
- Jones, Carol, et al. 2009. "Health Status and Health Care Access of Farm and Rural Populations." Economic Information Bulletin No. 57. Department of Agriculture,

- Economic Research Service. August.
- Kaiser Family Foundation. 2010. Health Reform Subsidy Calculator – Premium Assistance for Coverage in Exchanges/Gateways. April (Accessed). ([healthreform.kff.org/SubsidyCalculator.aspx](http://healthreform.kff.org/SubsidyCalculator.aspx)).
- Krueger, Alan. 1999. “Experimental Estimates of Education Production Functions.” *Quarterly Journal of Economics* 114, no. 2: 497-532.
- Ogunwole, Stella. 2006. “We the People: American Indians and Alaska Natives in the United States.” Department of Commerce, Economics and Statistics Administration, Census Bureau. February.
- Paltsev, Sergey, et al. 2009. “The Cost of Climate Policy in the United States.” Report 173. Massachusetts Institute of Technology, Joint Program on the Science and Policy of Global Change (April).
- Pirog, Rich, et al. 2001. “Food, Fuel, and Freeways: An Iowa Perspective on How Far Food Travels, Fuel Usage, and Greenhouse Gas Emissions.” Iowa State University, Leopold Center for Sustainable Agriculture. June.
- Small Business Administration and Department of Agriculture. 2010. “Memorandum of Understanding.” April.
- Social Security Administration (Office of Retirement and Disability Policy). 2009. *Annual Statistical Report on the Social Security Disability Insurance Program, 2008*. SSA 13-11826.
- Stynes, Daniel J. 2009. “National Park Visitor Spending and Payroll Impacts.” Michigan State University, Department of Community, Agriculture, Recreation and Resource Studies.
- Taylor, Jonathan B., and Joseph P. Kalt. 2005. *American Indians on Reservations: A Databook of Socioeconomic Change between the 1990 and 2000 Censuses*. Cambridge, MA: Harvard University Press.
- U.S. Congress. 2007. “America Competes Act.” Public Law 110-69.
- Vilsack, Thomas. 2010. “Statement by Thomas Vilsack, Secretary of Agriculture, Before the Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Committee on Appropriations, U.S. House of Representatives.” February 24 ([appropriations.house.gov/pdf/Vilsack\\_Opening\\_Statement-2-24-10.pdf](http://appropriations.house.gov/pdf/Vilsack_Opening_Statement-2-24-10.pdf)).
- Whitacre, Brian E. 2008. “Estimating the Economic Impact of Telemedicine in a Rural Community.” Working Paper. Washington: Broadband in the Rural Economy conference (September).