



United States Department of Agriculture



Report to the President of the United States from the Task Force on Agriculture and Rural Prosperity

Secretary Sonny Perdue, Chair



Dear Mr. President,

On April 25, 2017, you established the Interagency Task Force on Agriculture and Rural Prosperity through Executive Order 13790 and appointed me as its Chair. The purpose and function of this Task Force have been to identify legislative, regulatory, and policy changes to promote agriculture, economic development, job growth, infrastructure improvements, technological innovation, energy security, and quality of life in rural America. This report fulfills your request that these recommended changes be identified and presented to you, in coordination with the other members of the Task Force.

In response to your call to action to promote agriculture and rural prosperity in America, the Task Force envisioned a rural America with world-class resources, tools, and support to build robust, sustainable communities for generations to come. Members of the Task Force met, along with staff involved in separate working groups, to set priorities and a framework. Along the way, we held several “listening sessions” across the country, so that we heard directly from the communities that comprise rural America.

With the voice of rural America leading the way, and in close collaboration with local, state, and tribal leaders, more than 21 federal agencies, offices, and executive departments identified over 100 actions the federal government should consider undertaking to achieve this vision. These recommendations were organized around five key indicators of rural prosperity: e-Connectivity, Quality of Life, Rural Workforce, Technological Innovation, and Economic Development.

e-Connectivity for Rural America: In today’s information-driven global economy, e-connectivity is not simply an amenity - it has become essential. E-connectivity, or electronic connectivity, is more than just connecting households, schools, and healthcare centers to each other as well as the rest of the world through high-speed internet. It is also a tool that enables increased productivity for farms, factories, forests, mining, and small businesses. E-connectivity is fundamental for economic development, innovation, advancements in technology, workforce readiness, and an improved quality of life. Reliable and affordable high-speed internet connectivity will transform rural America as a key catalyst for prosperity.

Improving Quality of Life: Ensuring rural Americans can achieve a high quality of life is the foundation of prosperity. Quality of life is a measure of human well-being that can be identified through economic and social indicators. Modern utilities, affordable housing, efficient transportation and reliable employment are economic indicators that must be integrated with social indicators like access to medical services, public safety, education and community resilience to empower rural communities to thrive. Focusing and delivering key federal reforms will enable rural Americans to flourish and prosper in 21st Century communities.

Supporting a Rural Workforce: To grow and prosper, every rural community needs job opportunities for its residents, and employers need qualified individuals to fill those needs. This requires identifying employment needs, attracting available workers from urban and rural centers alike, and providing the workforce with training and education to best fill the available needs. There are many opportunities to partner with local businesses and organizations to identify gaps, to work with all levels of educational institutions to provide career training and development, to fine-tune existing training programs, and to grow apprenticeship opportunities to develop the required workforce. Providing rural communities, organizations, and businesses a skilled workforce with an environment where people can thrive will grow prosperous communities.

Harnessing Technological Innovation: By 2050, the U.S. population is projected to increase to almost 400 million people, and rising incomes worldwide will translate into a historic global growth in food demand. To feed a hungry world, we will need to harness innovation to increase output across American farmlands. In addition to increased crop yields, technological innovation can improve crop quality, nutritional value, and food safety. Innovations in manufacturing, mining, and other non-agricultural industries can enhance worker efficiency and safety. At the core of these developments that will further grow the rural economy is the expansion of STEM education, research, regulatory modernization, and infrastructure. Leveraging these innovations in an increasingly data-driven economy will also require further development of rural data management capabilities.

Economic Development: Infusing rural areas with stronger businesses and agricultural economies empowers America. Expanding funding options to increase the productivity of farmers and ranchers will lead to the enhanced viability and competitiveness of rural America. By promoting innovative farm technologies, energy security, recreation, agritourism and sustainable forest management, communities will be empowered to leverage the bounties of rural America. Investing in rural transportation infrastructure is needed for carrying more “Made in America” products to markets at home and abroad, and boosting our country’s global competitiveness. Reducing regulatory burdens and attracting private capital will support our ultimate mission of empowering Rural America to feed the world.

While other sectors of the American economy have largely recovered from the Great Recession, rural America has lagged in almost every indicator. Your charge to identify and recommend a pathway back to prosperity for these fellow citizens is one we have taken seriously. The creation of the Task Force and your directives contained in an Executive Order were, after all, not an Executive Suggestion. We are proud to issue this final report on our endeavors.

Sincerely,

A handwritten signature in black ink that reads "Sonny Perdue". The signature is written in a cursive, flowing style.

Sonny Perdue
United States Secretary of Agriculture
October 21, 2017

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The background features a stylized American flag with red and white horizontal stripes and a blue field with white stars. A solid blue silhouette of the United States map is overlaid on the flag, with the text centered within it.

I. The Opportunities of Rural America

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Rural America includes 72% of the nation's land and 46 million people¹. Rural areas encompass regions that focus on agricultural production as well as places where work is more often found in industries such as manufacturing, mining, and forestry. They include locales that are prosperous and rapidly-growing, locales that are chronically depressed, and everything in between. Rural America is home to many different racial and ethnic demographics and a wide array of economic activities. These residents live in a variety of settings, from counties bordering suburbs to remote and isolated areas.

Rural America has a diverse store of assets to draw upon: abundant land and natural resources; scenic and cultural amenities that attract new residents and visitors alike; a strong entrepreneurial spirit; and people of all ages and occupations. People remain in or move to rural areas for many reasons: to seek an active lifestyle, to take advantage of lower costs of living, to encounter less congestion, to enjoy a slower pace of life, and to more closely connect to nature and recreational opportunities. Many people return to their rural roots to raise children and reconnect with family and friends, filling workforce gaps and bringing needed leadership and professional skills.

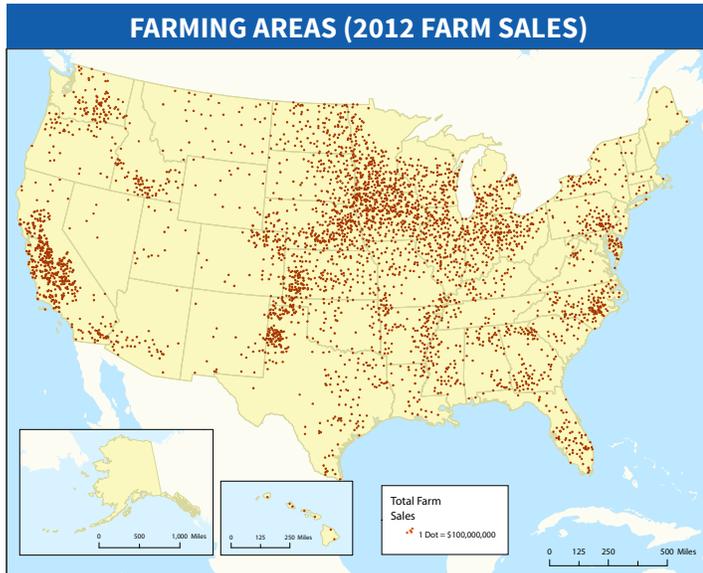
American prosperity and well-being are intrinsically tied to rural America's ability to thrive in the new global economy; to build and attract an educated workforce and expand its population base; and to use its diverse and abundant natural resources to provide food, fiber, forest products, energy, and recreation.

From the forests of Maine to the deserts of Arizona, from the Mississippi Delta to the Upper Great Lakes, rural communities face diverse economic challenges that differ from those found in urban areas. Less dense and relatively remote populations are affected by difficulties in accessing transportation, telecommunications, healthcare, housing, economic development resources, and job opportunities. In many regions, such as the Midwest and Great Plains, these challenges are associated with high rates of young adults leaving the region, resulting in fewer workers and an aging population. Indeed, aging itself poses challenges, such as reducing workforce capacity and increasing the demand for healthcare, housing, and other services geared to the needs of an older population.

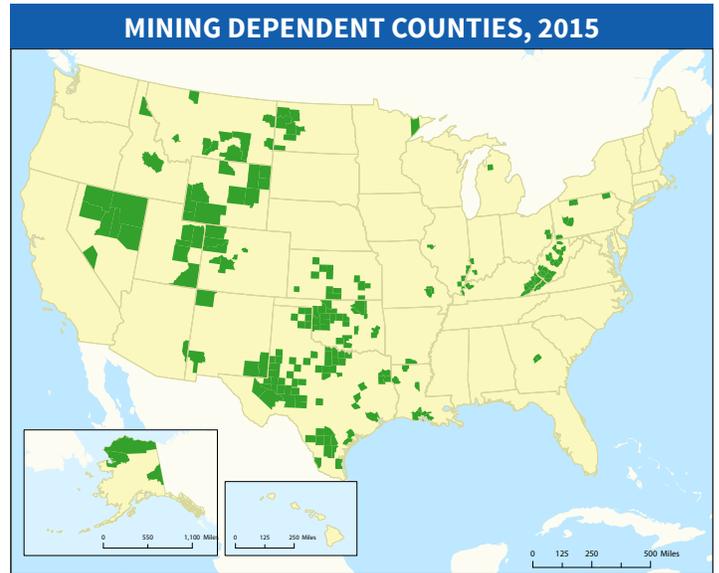
Alongside these challenges, rural America possesses inherent strengths which can be used for enhancing the prosperity of its people and its contribution to the economic well-being of the nation. Today's rural areas are more economically diverse than in the past, reflecting the national trend to greater reliance on service jobs. While traditional rural sectors such as agriculture, mining, and manufacturing employ a smaller percentage of the population than before, they continue to anchor the economies of more than half our counties across the nation. These sectors, disproportionately located in rural areas, exhibit higher-than-average productivity growth.

1 Unless otherwise noted, throughout this report, rural is defined using nonmetropolitan (nonmetro counties). The terms "rural" and "nonmetro" are used interchangeably. Both terms refer to counties outside of Metropolitan Statistical Areas, defined by the Office of Management and Budget (OMB), which include cities of 50,000 or more and counties connected to these cities through commuting. Studies designed to track and explain economic and social changes most often choose the metro and nonmetro classification because it allows the use of widely available county-level data. However, researchers and policy officials often employ multiple definitions to distinguish rural from urban areas.

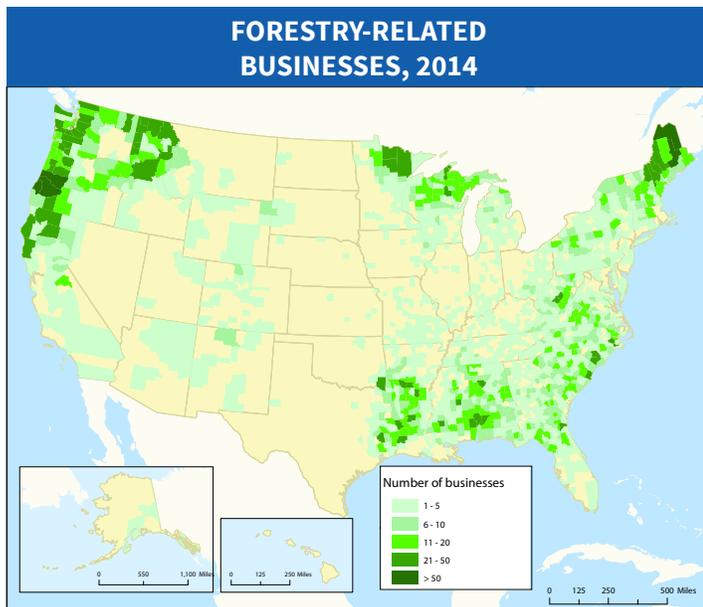
The dominance of traditional rural sectors varies across the country and reflects regions' most productive resources. For example, farm sales (gross sales of all farms in the United States that produce more than \$1000 per year) are concentrated in California, the Upper Midwest, the Great Plains, and parts of the Eastern Seaboard. Mining-dependent counties are primarily in the Mountain West, Great Plains, and parts of Appalachia. Forested lands are predominant in mountainous areas of the east and west. Manufacturing tends to be more concentrated in the eastern half of the United States, particularly the Upper Midwest and the South.



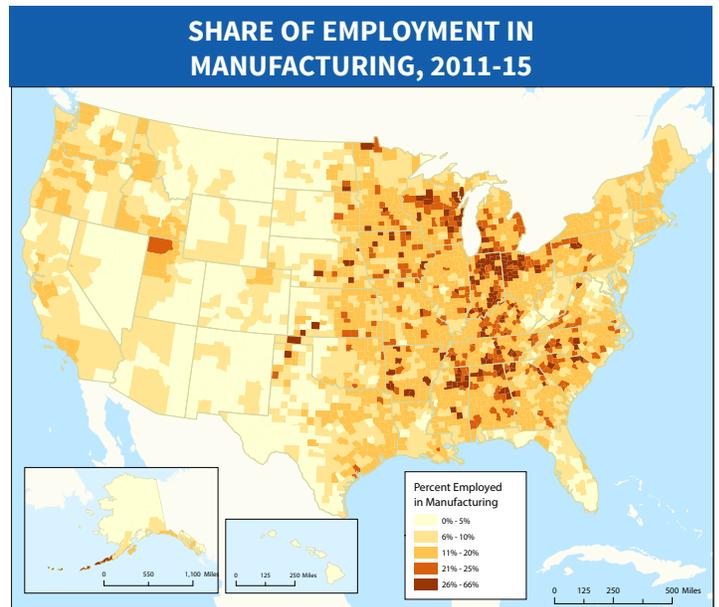
Source: 2012 Census of Agriculture



Source: USDA Economic Research Service Typology Codes, using data from the Bureau of Economic Analysis, 2015



Source: Census Bureau, County Business Patterns, 2014



Source: Census Bureau, American Community Survey, 2011-15

Overcoming the challenges and realizing the opportunities for prosperity in rural America requires action on multiple fronts, including promoting economic development, advancing innovation and technology, ensuring a well-trained and productive workforce, and improving the quality of life in rural communities. Success depends, in large part, on promoting two key drivers of long-term growth and prosperity: broad-based productivity growth in the rural economy and connectivity of rural people to each other, to urban areas, and to the rest of the world.



Achieving increased productivity usually requires innovation and technology, as well as access to capital, infrastructure, and an adequately trained workforce for businesses. In turn, the rural workforce depends on quality of life in rural areas, including the assurance that rural schools and health services are of sufficient quality, either to train productive workers from the local population or to attract employees and their families from other places. Drawing and retaining people and businesses in rural areas promotes economic development, because a large portion of employment growth in rural economies - in retail, healthcare, law enforcement and other public-sector jobs - depends on growth in the

rural population and local consumer demand. Hence, improving quality of life in rural areas is not only an important goal, but is also important to ensuring a productive rural workforce and maximizing rural prosperity.

In our increasingly digital economy, distance between rural economic inputs and markets is less of a barrier to business growth. Expanding availability of high-speed internet or e-connectivity allows rural areas to take advantage of this new reality in addition to broader domestic and international markets. Unfortunately, rural areas remain less connected to reliable high-speed internet today than metropolitan areas and have lower usage rates compared with urban areas. As a result, a wide array of digital services and activities - from e-commerce to telehealth to digital learning - are becoming an increasingly important feature for a prosperous rural life.

Unleashing the potential and ingenuity of rural communities is an integral part of making America great again. This report should serve as a roadmap to guide the federal government towards empowering rural America to take advantage of the many opportunities that can and do exist. Facilitating and supporting access to world-class resources and tools that build robust, sustainable communities for generations to come is required for success.

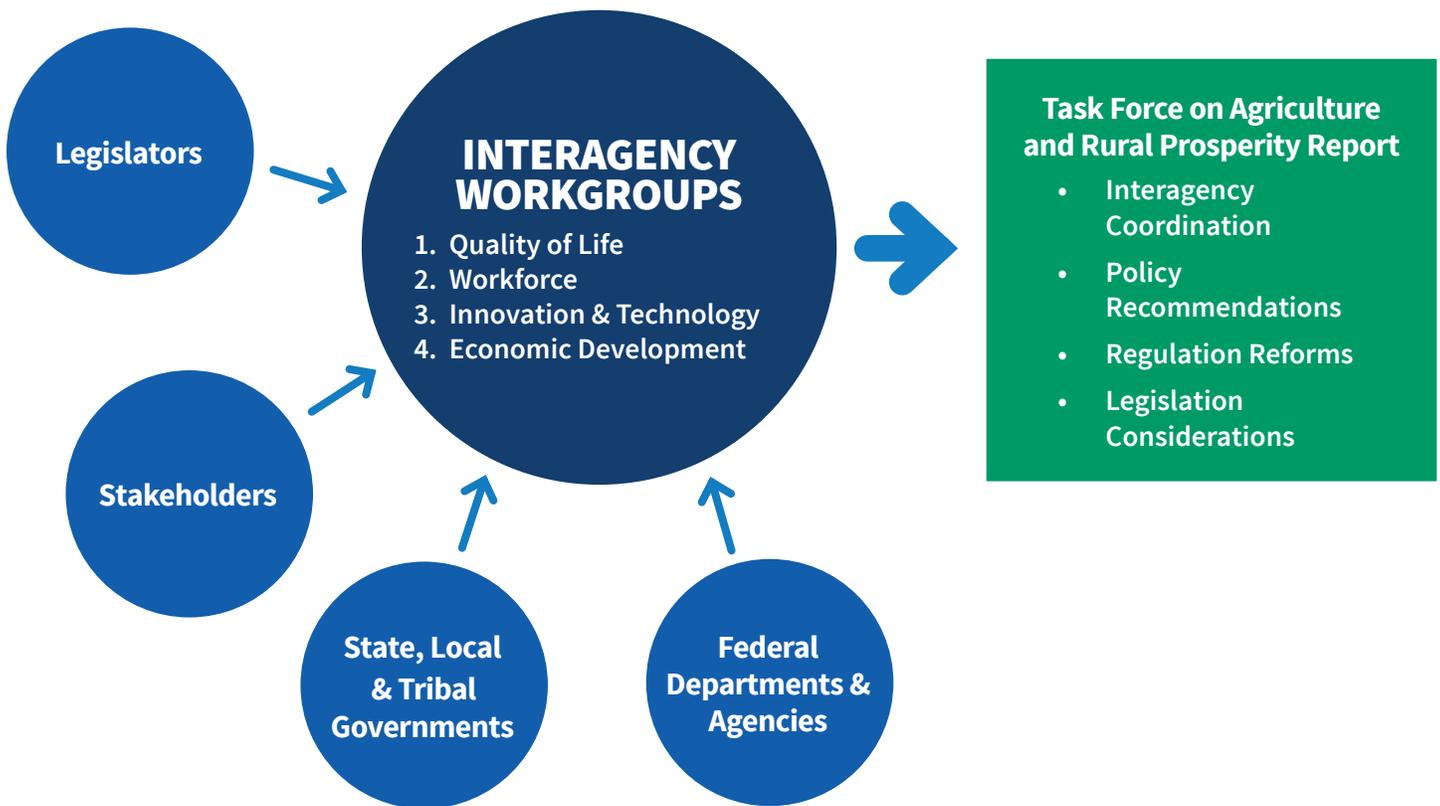
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II. Task Force Approach

II. Task Force Approach

The President's Executive Order directed the Task Force to identify key legislative, regulatory, and policy changes to achieve rural prosperity in seven areas: rural American agriculture, economic development, job growth, infrastructure improvements, technological innovation, energy security, and quality of life. To improve customer service and maximize efficiency across the federal government, interagency coordination was also identified as a key place for change.

This report represents a summary of the recommendations gathered by the Task Force through direct engagement with stakeholders, consultations with state, local, and tribal governments, as well as federal agencies with equity in rural America.



The Voice of Rural America

The Task Force found significant guidance from rural stakeholders in the development of this report. Beginning at the inaugural public session of the Task Force held on June 16, 2017 at the Department of Agriculture, and continuing through the comments submitted on a regular basis through an online portal, we heard from the people of America. Additionally, Task Force Chair Secretary Perdue, along with senior federal leadership hosted roundtables in Wisconsin, Georgia, New Hampshire, West Virginia, and North Carolina to hear from partners and understand the concerns of rural citizens.

Our Federal Family

To capitalize on the programmatic specialties spanning the federal government, the Task Force divided into four workgroups comprised of representatives of federal departments, specific agencies, and subject matter experts. Each workgroup focused on a specific topic, including: Quality of Life, Rural Workforce, Innovation and Technology, and Economic Development. Together, they designed a roadmap of goals and strategies to make our country great again through the prosperity of rural America. Collectively, the workgroups identified over 100 recommended potential actions. To inform these recommendations, a robust and in-depth analysis from the Department of Agriculture's Economic Research Service was developed to identify the opportunities and challenges for agriculture and rural prosperity in America.

Task Force members include:

- The Secretary of the Treasury
- The Secretary of Defense
- The Attorney General
- The Secretary of the Interior
- The Secretary of Commerce
- The Secretary of Labor
- The Secretary of Health and Human Services
- The Secretary of Transportation
- The Secretary of Energy
- The Secretary of Education
- The Administrator of the Environmental Protection Agency
- The Chairman of the Federal Communications Commission
- The Director of the Office of Management and Budget
- The Director of the Office of Science and Technology Policy
- The Director of the Office of National Drug Control Policy
- The Chairman of the Council of Economic Advisers
- The Assistant to the President for Domestic Policy
- The Assistant to the President for Economic Policy
- The Administrator of the Small Business Administration
- The United States Trade Representative
- The Director of the National Science Foundation
- The heads of such other executive departments, agencies, and offices as the President or the Secretary of Agriculture may, from time to time, designate

Putting the Recommended Actions to Work

To ensure that the findings of this report have a meaningful impact on rural America, the Task Force urges that work and oversight continue to compel action. Leadership is still required to accomplish many of its goals, including to implement the initial recommendations for which action plans have begun; to move other ideas from conception into action plans; to expand stakeholder participation; to set regional task force solutions; to increase the activities of state, local, and tribal partners; and to advance other suggestions federal partners may make in the future.

The Task Force proposes the following structure for the continuation and implementation of ongoing federal interagency action aimed at improving rural prosperity:

1. **Establish a Federal Commission on Agriculture and Rural Prosperity** – The Commission should be structured similar to the current Task Force. This group of Cabinet and federal executive leaders should meet no less than bi-annually to ensure appropriate interagency coordination and execution of the Task Force actions and future agreed-to activities. Further, the Commission should prepare regular reports to the President, not less than once a year, to demonstrate progress on Commission actions.
2. **Establish a Stakeholder Advisory Council to Advise the Commission** – The Commission should prioritize on-going, robust stakeholder participation from the private sector and non-federal governmental (State, Local & Tribal) interests. The role of the Advisory Council would be to help identify, develop and implement actions that lead to prosperity in rural America. The Advisory Council should meet on a regular basis with the Commission’s Managing Director to provide input on recommendations, action plans and opportunities for federal, state, tribal, local and public private partnerships.
3. **Establish a Managing Director to Oversee the Commission and Advisory Council** – A Managing Director should be appointed and charged with establishing strategic and communications plans for implementing the work of the Commission, including development and execution of action plans. The Managing Director should also be tasked with organizing and managing the meetings and work product of the Commission and Stakeholder Advisory Council. Additionally, the office would develop, execute and expand inter-agency agreements, MOUs and create new agreements as necessary, as well as develop and manage implementation metrics and measures to guide the interagency actions and the success of the Commission.



III. Answering the Call to Action for Rural America

RURAL PROSPERITY

Rural America can make our country great again.





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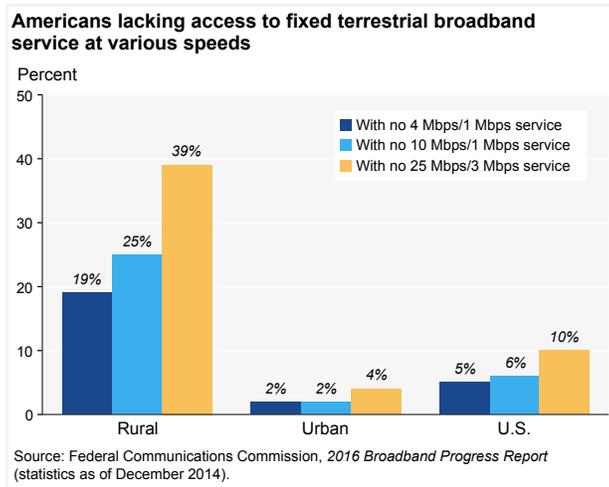
Call to Action #1: Achieving e-Connectivity for Rural America

In today’s information-driven global economy, e-connectivity is not simply an amenity - it has become essential. E-connectivity, or electronic connectivity, is more than just connecting households, schools, and healthcare centers to each other as well as the rest of the world through high-speed internet. It is also a tool that enables increased productivity for farms, factories, forests, mining, and small businesses. E-connectivity is fundamental for economic development, innovation, advancements in technology, workforce readiness, and an improved quality of life. Reliable and affordable high-speed internet e-connectivity will transform rural America as a key catalyst for prosperity.

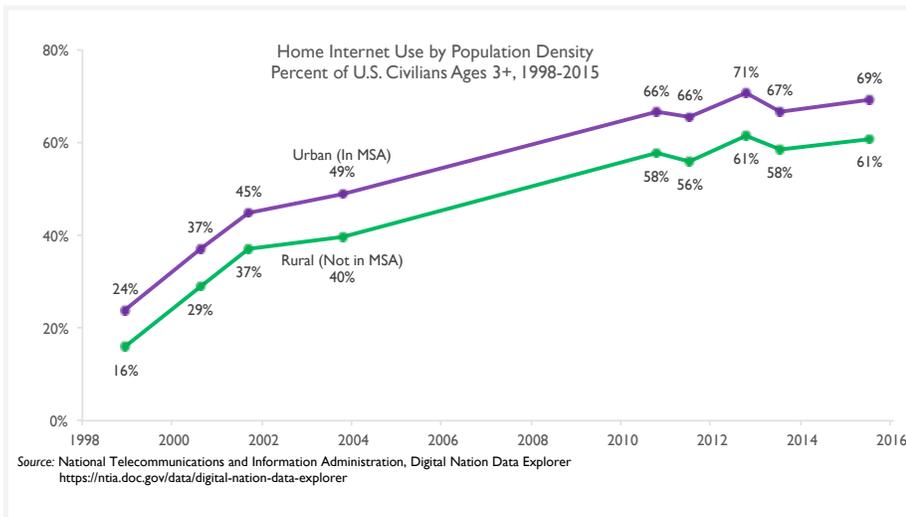
The expansion of high-speed, high-capacity internet to connect rural America to the “digital superhighway” of global commerce is a key infrastructure priority. E-connectivity for rural America is essential for ensuring America’s economic competitiveness and enabling all Americans to be plugged in to a world of opportunity.

Over the past decade, high-speed internet has been transformational for the U.S. economy. It has facilitated commerce and generated sustainable economic activity. A recent study indicated that the rural broadband industry supported nearly 70,000 jobs and over \$100 billion in commerce in 2015 (Kuttner, 2016). In addition, the U.S. Census Bureau estimates that U.S. retail e-commerce sales amounted to \$111.5 billion in the second quarter of 2017, an increase of nearly 5% from the prior quarter and 16.2% year-over-year growth.

Unfortunately, too many Americans do not experience the benefits of robust internet service. As of 2014, 39 percent of the rural population lacked access to broadband at speeds necessary for advanced telecommunications and data transfer capability (see chart for comparison with urban and national populations). This e-connectivity gap not only prevents rural Americans from participating in the global marketplace but also limits urban Americans



from accessing the innovations and products of rural America. Additionally, this digital divide means rural American businesses miss opportunities to serve new global customers.



The lack of complete e-connectivity in rural areas can be attributed to many factors. It is particularly challenging and expensive to deploy broadband networks to rural America—namely due to low population density and challenging geography. In addition to these difficulties, broadband providers often face bureaucratic obstacles to building a network, including arduous application processes, lack of access to infrastructure, and burdensome regulatory reviews.

Rural e-connectivity supports economic development for the whole nation through access to capital and global markets, job training and workforce development, innovation and technology and enhanced quality of life. Throughout this report, examples illustrate that robust and reliable e-connectivity is a critical ingredient for rural prosperity.

Connectivity is especially vital for the original “Made in America” industry – agriculture – to increase farm productivity to feed the world. The U.S. Census Bureau estimates that the U.S. population is expected to rise to almost 400 million by 2050. To supply this number of people with food, American farms need reliable, real-time internet connectivity to oversee operations in the fields, manage finances, and respond to international market conditions. To match world food demand, innovative technologies such as precision agriculture can ensure American farms reach the necessary levels of productivity. Such methods require every part of the farm to be connected to the worldwide web, not just the farmhouse.



Photo credit: Getty Images

Unlocking rural prosperity by promoting e-connectivity for all Americans also provides the opportunity to achieve a higher quality of life through modern teleworking, telemedicine and telehealth, and digital learning. For instance, the shifting digital economy provides new opportunities for rural Americans seeking the ability to work from home. According to the Bureau of Labor Statistics, from 2003 to 2015, the share of workers doing some or all of their work away from their office increased from 19 to 24 percent nationwide.



High-speed internet access can also address the gap in health services in rural communities. Telehealth and telemedicine allow rural residents to connect to distant healthcare professionals, conduct remote monitoring of chronic medical conditions, and access specialists that may not work in their local health facilities. Remote healthcare through telehealth and telemedicine also reduces the cost of care, improves patient outcomes, and reduces the burden on patients.

E-connectivity also allows rural residents to access a broader range of educational opportunities. Digital learning is growing rapidly and likely to be particularly impactful for more remote rural areas that may not have access to the same educational resources as larger or more urban communities. According to the National Center for Education Statistics, the share of undergraduate students taking digital education courses grew from 16 percent in 2003-04 to 32 percent in 2011-12. However, many rural elementary and secondary schools do not have adequate connectivity. The Federal Communications Commission estimates that 16 percent of schools in small towns and 21 percent of schools in rural areas still lack a fiber connection.

Solving the broadband access gap in rural America will require a concerted effort to encourage deployment of new infrastructure and innovative business models that promote capital investments. The development and implementation of other strategic infrastructure systems across the United States was key to ensuring past generations of rural Americans weren't left behind as the rest of the world modernized, including rural electrification, rural telephone service, and the Eisenhower Interstate Highway System. The economic equalizer of our day is high-speed internet to every rural community and production site, connecting rural America's potential to a world of opportunity.

Past efforts to connect rural America have resulted in the allocation of substantial amounts of federal funds for broadband deployment and, while such investments made important contributions, our country has not fully achieved the connectivity needed for success in the economy of today and tomorrow. Although capital investment is one aspect of bridging the divide, far too many government policies stifle network buildout. By streamlining the deployment process, allowing access to existing infrastructure, and reducing barriers to buildout, risk can be reduced and providers can be encouraged to expand networks throughout rural America.

As we modernize and reduce regulations, we should also consider the full range of means to connect rural communities, including satellite, fixed wireless, and cellular networks. These technologies can be less expensive to deploy than traditional wired networks and are rapidly improving in quality. A technology-neutral, service-focused approach to broadband deployment may allow for more rapid and widespread connectivity.

Rural prosperity can only truly be achieved by connecting rural America to high-speed internet. It is critical to act quickly as the need for rural e-connectivity is growing every day. We must also ensure rural America won't be left behind as we move toward next-generation networks like 5G, and emerging technologies like the Internet of Things. Prioritizing e-connectivity for rural America is the key to generating prosperity, investment, and innovation.



Objectives & Recommended Actions

1. **Establish Executive Leadership to Expand E-connectivity Across Rural America** – The Task Force recommends that the Executive Office of the President develop and implement a strategy based on best practices to deploy rural e-connectivity across the nation. The recommended participating offices and agencies include the National Economic Council, White House Office of Science and Technology Policy, Office of American Innovation, Department of Agriculture, National Telecommunications and Information Administration under the Department of Commerce, the Federal Communications Commission, the Department of Education, the Department of Health & Human Services, the Department of the Interior, and other Departments and agencies needed.
2. **Assess State of Rural E-connectivity** – Coordination by the Executive Office of the President of a multi-sector assessment of the current state of affordable rural high-speed internet access, including identification of infrastructure and service gaps. Such a data-driven analysis of service levels, reliability, and affordability should inform the creation of the rural e-connectivity strategy. An analysis of total capital investment necessary for rural e-connectivity should be conducted, including existing federal and non-federal subsidies.
3. **Reduce Regulatory Barriers to Infrastructure Deployment** – Revise federal regulations to encourage investment in reliable, high-speed internet in rural areas, expedite approval and internal review timelines and streamline permitting processes to promote increased build-out of infrastructure. The federal government should coordinate any regulatory reform efforts with those being pursued by the Administration’s efforts to reduce regulatory burdens under EO 13771, “Reducing Regulation and Controlling Regulatory Costs.”
4. **Assess Efficacy of Current Programs** – Simultaneous with the above actions, the Task Force recommends an assessment of existing federal grants and subsidy programs devoted to or used for deploying e-connectivity. The assessment should include identification of duplicative and overlapping programs throughout the federal government, and recommendations to enhance the coordination of various funding streams to maximize impact.
5. **Incentivize Private Capital Investment** – Encourage free-market policies, laws, and structures at federal, state, tribal, and local government levels to create an environment conducive to investment, including public-private partnerships. Such partnerships can bring innovation and investment of sustainable capital to bridge the e-connectivity gap in the fastest and most affordable manner.





Photo credit: USDA Flickr



Call to Action #2: Improving Quality of Life

Ensuring rural Americans can achieve a high quality of life is the foundation of prosperity. Quality of life is a measure of human well-being that can be identified through economic and social indicators. Modern utilities, affordable housing, efficient transportation and reliable employment are economic indicators that must be integrated with social indicators like access to medical services, public safety, education and community resilience to empower rural communities to thrive. Focusing and delivering key federal reforms will enable rural Americans to flourish and prosper in 21st Century communities.

Rural America offers opportunities to attain a high quality of life often characterized by abundant natural resources, a less hurried pace of life, and an affordable cost of living. As the modern economy becomes more mobile, the places that Americans choose to live is increasingly influenced by the quality of life in their home communities. For example, over the past 40 years, a desire to live close to natural amenities such as lakes, seashores, mountains, and areas with a moderate climate have driven population growth in many rural regions. This is especially seen in the Southeast, Great Lakes, Mountain West, and Pacific Coast regions. Within these outside areas, such features dramatically enhance the quality of life for rural communities and exhibit a large share of employment and earnings in recreation-related activities. Many of these recreation-based economies were hard hit by the Great Recession, slowing in population growth from 4.6 percent during 2002-08 to only by 1.2 percent during 2010-16 according to the U.S. Census Bureau. However, these areas continue to grow faster than other types of rural areas.

Despite the unique quality of life that some rural communities can provide, others face long-standing and emerging challenges. For example, there are two very different types of rural communities that tend to have a consistently high number of people leaving. One type has high poverty rates – more than 25 percent – and is hindered by low educational attainment and high unemployment. The other type is generally prosperous but tends to be remote, thinly settled, and lacking in scenic appeal for prospective residents or tourists. In general, quality of life deficits appear to be a main drawback for these communities.

In some places, housing affordability has become a major challenge, either because housing costs have risen rapidly or because incomes are insufficient for self-supported housing at market rates. These burdens are increasing among rural renters, in both high-amenity areas and in communities with high poverty rates.

In such parts of rural America, addressing the shortage of local jobs and a lack of connection to those job opportunities will be a major factor in overcoming these challenges.

Transportation is often a challenge for many rural communities as well. According to the U.S. Bureau of Transportation Statistics, people living below the poverty level are less likely to own or have access to a personal vehicle to get to work. Compared to other commuters, people below the poverty level are more likely to use lower-cost options such as carpooling, taking public transportation, or using other transportation modes, but such options are less available in rural areas. The Department of Transportation's Federal Transportation Administration supports numerous small town and rural transportation systems in connecting their citizens to jobs, healthcare, and other critical destinations through various programs. Additionally, other federal agencies provide funding for rural transit services for specific trip purposes, such as visits to medical facilities. However, the presence of multiple funding streams often results in multiple networks serving the same rural area. Some states and localities around the nation have instituted methods to optimize federal funding programs into coordinated and unified systems to serve their citizens, yet creating and administering such coordination is an arduous task. As a result, many rural transit services remain expensive to subsidize and unable to fill the transportation needs of rural businesses and citizens.



Photo credit: Getty Images

Rural road safety is another quality of life issue that federal, state, and local governments are working to address. According to the Department of Transportation, more than half of all traffic fatalities in 2014 occurred on rural roads. In addition, the fatality rate per vehicle-mile-traveled in rural areas was 2.4 times higher than the fatality rate in urban areas, though that figure decreased by 24 percent between 2005-14. Moreover, almost two-thirds of drivers and passengers in rural crashes died at the scene in 2014, compared to just 35 percent in urban crashes. Such ratios were due in part due to higher speed crashes and increased distances to first responders and hospitals.

The modernization of built infrastructure for rural utilities is also an important component of quality of life and rural prosperity. This includes the full installation of smart grid technology throughout rural power systems. Rural electric cooperatives have begun deploying fiber optic networks throughout their service areas to meet the current, growing, and future demand for smart grid services, such as demand side management, distributed generation and renewable integration, and smart home technologies, as well as increased grid security. The ability to dynamically manage energy use is critical to ensuring network reliability, enhancing system-wide efficiency and keeping electric rates affordable for rural residents and businesses. The high-speed networks, connecting electric system infrastructure and even direct connections to customer locations, can also provide a platform and catalyst for fiber to rural homes.

Safe drinking water and sanitary waste disposal systems are vital for achieving a high quality of life. Additionally, water infrastructure is essential to many rural industries, e.g., farming, manufacturing, and mining (Kearney et al., 2014). It is also important to households, with more than 86 percent of the U.S. population relying on public water

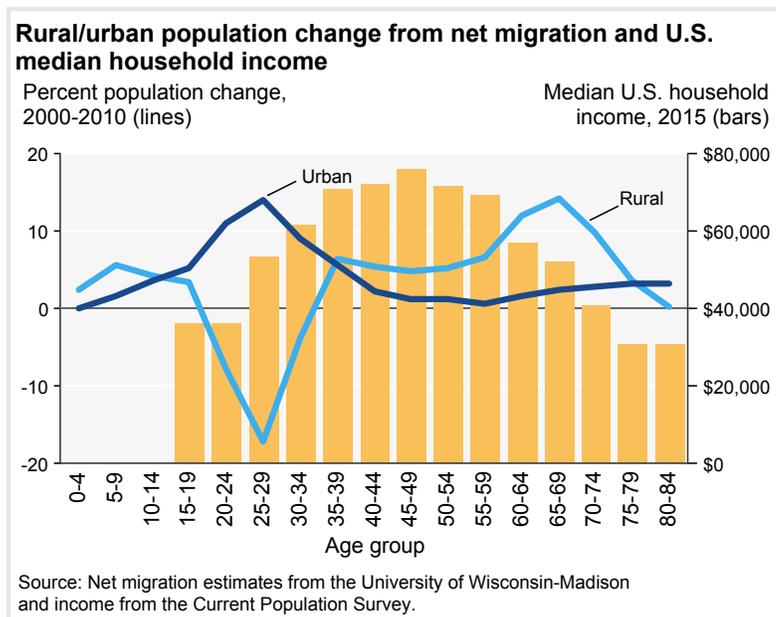


Photo credit: USDA Flickr

supply systems (EPA, 2013). Overall, water infrastructure is increasingly important to making rural areas attractive places to live and as a driver of rural recreation and tourism.

Many poor and remote rural areas also lag in high-speed internet connectivity and easy, fast access to other forms of infrastructure. These often include highways, airports, water and sewer facilities, care centers, housing options, and quality educational facilities. Building water treatment plants, hospitals, schools, homes, transportation systems and other impactful community infrastructure not only creates jobs, but also increases long-term aggregate demand for goods and services within a community as well as contributes to rural prosperity development.

As a byproduct of differing levels of housing and infrastructure, the population of rural America is neither steady nor growing and does not match with its potential. In fact, varying rates of growth and decline in rural America depend on age and other considerations that highlight both the challenges and opportunities related to quality of life in rural communities. In the years after high school, young adults seeking better educational and career opportunities disproportionately leave rural areas for urban destinations. Then, during more advanced periods of personal and professional life, Americans tend to migrate to small cities and rural communities. Therefore, the population loss among those in their twenties is partly regained by adults in their thirties who bring technical and leadership skills back to their rural communities and focus on raising their children.



Such a trend yields a positive migration pattern to rural areas by adults in their late 30s, and also in their mid- 40s and 50s, when median household incomes reach their peak. This pattern further increases among early retirees (ages 65-69), especially focused on areas with features such as natural resource access and healthcare options. The migration of rural residents indicates the critical role that quality of life, access to healthcare, effective schools, and other vital services can play in sustaining rural populations and fostering long-term rural prosperity.

Overall, the rural population is shrinking for the first time on record and it is not just due to the migration of young adults to urban areas.

Fewer births, increased mortality among working-age adults, and an aging population are health factors that are driving numerous other aspects of rural social and economic life. For example, many communities are challenged in terms of access to medical services and primary care due to their relative remoteness from population centers. The recent rise in rural mortality rates among adults ages 35-54 can be tied to a dramatic increase in mortality from natural causes - e.g., heart, liver, and respiratory diseases, or cancer - and to the opioid epidemic.

While the opioid epidemic affects both rural and urban areas, the rise in natural cause mortality is largely a rural problem and represents a growing threat to quality of life and rural prosperity. If these trends are left unaddressed, the rural population will not only continue to decline but the dependency ratio will increase.

As a result, the number of people likely to be not working (children and retirees) will overwhelm the number of people who are likely to be wage earners (working-age adults) and it will become increasingly difficult to achieve a high quality of life.

Objectives & Recommended Actions

- 1. Advance Educational Opportunities** – Create a strategy for public-private partnerships to complete the connection of all rural Pre-K through Grade 12 and Community/Technical Colleges to high-speed, high-capacity internet to maximize the use of digital learning, especially the deployment of curricula for STEM subjects most relevant to rural economies such as agriculture, manufacturing, military, and business. These opportunities should include the Department of Agriculture, Department of Labor, and Department of Education, and other pertinent agencies aligning on implementation along with key stakeholders. A primary activity should be conducting outreach and designing the optimal set of roles for various government agencies and private sector organizations.
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- Photo credit: Getty Images*
- 2. Modernize Healthcare Access** – Assure that the policies and roles of the federal government support access to medical treatment facilities, including health clinics, telemedicine, vocational and medical rehabilitation facilities, dental clinics, assisted living, nursing homes and memory care facilities. Better coordination of the sources of capital that support high-need providers in rural areas is needed, including current federal funds and potential new private funds. Implementation of best practices can be identified and facilitated to enhance access to primary care and specialty providers through telemedicine. Improved access to mental and behavioral care, particularly access to prevention, treatment, and recovery resources is vital to address the nationwide opioid crisis and other substance misuse in rural communities. The Task Force recommends a multi-agency approach to align federal policies and programs for rural healthcare modernization within the Department of Health & Human Services, Department of Veterans Affairs, Department of Housing & Urban Development, Department of Interior, Department of Agriculture and other related agencies. The objective would be to prioritize actions and streamline current funds and financing tools of federal, state, tribal and local governments, as well as private sector organizations. Within existing resources, a more efficient deployment of current taxpayer resources can more effectively address the rural healthcare needs.
- 3. Innovate Options for Rural Housing** – Develop a set of shared best practices for increasing homeownership, reducing homelessness in rural communities, and building robust community infrastructure. Such practices should include recommendations for federal, state, tribal and local action to strengthen investments in rural housing and provide technical assistance. The Task Force recommends options such as the Department of Housing & Urban Development, Department of Veterans Affairs, Department of Agriculture, Department of Labor, and Department of Education jointly evaluating
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- Photo credit: USDA Flickr*

federal rural housing policies and programs, and targeting existing resources to best support sustainable housing in rural communities. To optimize rural housing options for the workforce needed in the current and future economies, private sector organizations' resource deployment to rural areas can also be incentivized.

4. **Improve Transportation Options** – Targeted investment within current programs that are outcomes-driven can further address the disproportionately high fatality rate on rural roads, including multi-agency collaboration on policies. States and local transit systems can save tax dollars and more effectively serve rural citizens' mobility needs to job sites, education centers, and healthcare facilities, by streamlining federal policies, programs, and funds that support rural public transit systems. Interagency coordination could include the Department of Transportation, the Department of Health & Human Services, the Department of Labor, and other relevant agencies better aligning policies for rural transit services based on locally-created rural community economic development strategies.

5. **Modernize Rural Utilities** – Advance and expedite the important infrastructure modernization and technology investments that can be prioritized for rural communities' electric power and water systems. Existing resources can be utilized to further invest in rural communities' water infrastructure. For smart grid deployment, enhancements to federal financing programs at the Department of Agriculture can be executed in further conjunction with the Department of Energy. In addition, the Federal Communications Commission and the Department of Agriculture can further coordinate programs on the installation of high-speed e-connectivity in rural communities.



6. **Improve Community Resiliency Planning** – Align federal economic development policy and resources in a manner that enhances rural prosperity. The Task Force recommends that a strategy is built out that includes best practices in site selection, workforce development, utility and transportation infrastructure, and use permitting. It could also encourage community resilience at the local level by requiring that federal planning strategies, such as the Economic Development Administration's Community Economic Development Strategies (CEDs), include identification of strategic industries for rural regions and plans for disaster preparedness and recovery. For example, coordination between the various agencies and programs of the Department of Agriculture can enhance the effectiveness of all federal agencies' efforts to support economic growth and resiliency in rural America, including CEDs, which can be used to drive federal investment in rural areas per these locally-created prosperity plans.



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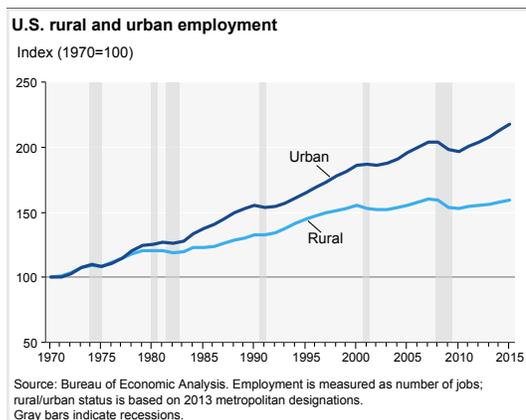


Call to Action #3: Supporting a Rural Workforce

To grow and prosper, every rural community needs job opportunities for its residents, and employers need qualified individuals to fill those needs. This requires identifying employment needs, attracting available workers from urban and rural centers alike, and providing the workforce with training and education to best fill the available needs. There are many opportunities to partner with local businesses and organizations to identify gaps, to work with all levels of educational institutions to provide career training and development, to fine-tune existing training programs, and to grow apprenticeship opportunities to develop the required workforce. Providing rural communities, organizations, and businesses a skilled workforce with an environment where people can thrive will grow prosperous communities.

Since 1970, rural employment has grown slower than in urban areas (60 percent compared with 120 percent in urban areas), according to the Bureau of Economic Analysis. Rural employment recovery was especially slow after the Great Recession (2007-09), a fact concerning to future rural prosperity. Notwithstanding, there were 19 million workers in Rural America in 2016, which was approximately 13 percent of the U.S. total.

Certain industries, such as agriculture, forestry, mining, and manufacturing, are especially important to rural America and all account for larger shares of employment and earnings in rural compared to urban



areas. The Bureau of Economic Analysis estimates that farm employment (both self-employed farm operators and their hired workers) accounted for about 6 percent of all nonmetro employment in 2015, compared to less than 1 percent in metro areas. Additionally, farm employment leads to downstream jobs, which can lead to rural economic growth. While production agriculture hires 1.2 million workers annually according to the U.S. Census Bureau, farmers face instability due to the lack of available American citizens and lawful permanent resident workers to fill these jobs. This has led some farmers to hire illegal foreign labor and the underutilization of the H-2A visa program to hire legal foreign workers. When farmers face this instability, they

often elect to downsize their operations or plant more mechanized commodities, which negatively impacts the local labor market.

Turning to manufacturing, the Bureau of Economic Analysis reports that the industry employs a larger share of the nonmetro workforce compared to the metro workforce (11 percent versus 6 percent in metro areas). Additionally, other more consumer-oriented services have similar shares of jobs and earnings in both nonmetro and metro areas, as does the recreation sector.

Lastly, healthcare and the ability to recruit and retain healthcare providers and facilities is also critically important to rural prosperity and unfortunately the slower overall population growth has historically detracted from an overall growth in total healthcare employment.



Within these sectors and others, there is much opportunity for growth in rural America. This is shown by evaluating occupations employing 150,000 or more people in rural counties in 2015. Seven of these 33 occupations were projected by the Bureau of Labor Statistics to grow by 10 percent or more nationally between 2014 and 2024 (see table). The top four occupations are all healthcare-related: personal care aides; nursing, psychiatric, and home health aides; licensed practical and licensed vocational nurses; and registered nurses. Their educational requirements range from no formal credential (for personal care aides, who earned a median

salary of \$21,920 per year in 2016, and whose employment is projected to grow by 26% nationally over ten years) to a four-year college degree (for registered nurses, who earned a median salary of \$68,450 per year in 2016, and whose employment is projected to grow by 16% nationally over ten years). By contrast, rural occupations serving a national or international market may more nearly mirror the national growth rate. For example, customer service representatives, an occupation projected to grow by 10% in ten years, may be employed in rural call centers serving broader markets. Business accountant and auditor employment is projected to grow by 11% over ten years at the national level, including rural businesses that are tied to national product markets.

Occupations with 150,000 or more rural workers and with projected national growth rates of 10 percent or higher, 2014-2024.

Occupation	National Job Growth, 2014-24	National Median Wage, 2016	Education Required	Experience Required	On-The-Job Training Required
Personal care aides	26%	\$21,920	No formal credential	None	Short-term
Nursing, psychiatric, and home health aides	24%	\$25,159	High school diploma or equivalent	None	Short-term
Licensed practical and licensed vocational nurses	16%	\$44,090	Post-secondary non-degree award	None	None
Registered nurses	16%	\$68,450	Bachelor's degree	None	None
Construction laborers	13%	\$33,430	No formal credential	None	Short-term
Accountants and auditors	11%	\$68,150	Bachelor's degree	None	None
Customer service representatives	10%	\$32,300	High school diploma or equivalent	None	Short-term

Sources: BLS Employment Projections (<https://www.bls.gov/emp/>); Occupational Employment Statistics (<https://www.bls.gov/oes/>); and the 2015 and 2016 American Community Surveys.

Moreover, it is necessary to look globally as a means for job creation. U.S. agricultural exports support output, employment, income, and purchasing power in both the farm and nonfarm sectors. The Department of Agriculture's Economic Research Service estimates that in 2015 each dollar of agricultural exports stimulated another \$1.27 in business activity. Additionally, every \$1 billion of U.S. agricultural exports in 2015 supported approximately 8,000 American jobs throughout the economy. Total agricultural exports in 2015 supported 1,067,000 full-time civilian jobs, which included 751,000 jobs in the nonfarm sector, according to the Department of Agriculture.



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There are significant opportunities for the rural workforce to prosper and grow, but reviewing available data and identifying gaps to match curricula and training programs are required to best serve employer needs. Successful workforce development strategies strive to create well-educated and skilled individuals whose qualifications meet the requirements of the contemporary economy. Career mapping within educational systems – beginning at K-12 and continuing through higher education – is necessary to help prepare the workforce of the future to fit rural economies. Many rural communities perform

well relative to urban areas in many measures of school quality and in the rate of college attendance among their young adults, which is more difficult to achieve for the most remote rural areas and for those with relatively large shares of low-income residents. Ultimately, strong primary and secondary schools that focus curricula and offer strong career guidance are fundamental to generating a robust and ready workforce needed in rural America.

As we develop the workforce of the future, it is also important to prepare current, available workers to fill both existing and newly created jobs. Higher education is becoming increasingly unaffordable and many colleges and universities fail to help students graduate with the skills necessary to secure high paying jobs in today's workforce. Along with fine tuning available public and private training programs, expanding apprenticeships may enable more Americans to obtain relevant skills and high-paying jobs. Apprenticeships provide paid, relevant workplace experiences and opportunities to develop skills that are valued by employers.

Objectives & Recommended Actions

1. **Connect Rural Skillsets to Jobs of the Future** – Before we can provide suitable resources, we must identify existing job demands, skillset gaps, and community needs. A robust interagency effort is needed to study current gaps and job demands in all sectors to better specialize our educational and training efforts. We recommend that interested agencies complete a study which clearly identifies these gaps. That survey will then be used to promote curricula rationalization methods in K-12 education, secondary educational institutions, and technical training programs. This effort will better link educational and career guidance given at an early age to local economic needs. We must also focus on developing universally adaptable skills that provide flexibility in a rapidly changing environment. This research is the integral first step to best serve rural communities and ensure we are training for jobs that are needed, but also provide an adaptable workforce as new skillset are needed.
2. **Promote and Expand Apprenticeship Programs** – The Task Force identified clear needs in the healthcare and trade industry sectors while rural businesses and communities struggle to find talent

to fill jobs in these sectors. The Task Force recommends that federal agencies promote and assist local businesses in the expansion of apprenticeship programs. In the near term, we support creating an interagency workgroup to identify priorities and develop apprenticeship programs for rural America.

3. **Connect Veterans to Underutilized Training Programs** –

Despite a clear effort to reach these available and talented individuals that are ready and willing to work, programs are not easily accessible and often siloed within the federal agencies; therefore, not maximizing the potential talent lying within this population. The federal government must do better to connect, streamline, and eliminate duplication across the agencies to better reach and serve veterans. We recommend an interagency inventory of available veterans' programs, a focused effort to eliminate duplication by creating a one stop shop for better customer service, and implementing metrics to measure veterans' access and use of training programs.



4. **Improve Rural Access to Education and Training** – Job opportunities, training programs and educational materials are not easily accessible by businesses and jobseekers. As we work to eliminate interagency silos, there are ways to better market the resources already available to rural populations using existing resources.

- a. **Improve Interagency Collaboration** – The Department of Education and the Department of Agriculture should strengthen the collaboration between the two departments, their stakeholders and partners to improve access to quality education in rural communities and create opportunity for children in rural America. The interagency coordination will (1) increase investment within existing resources for a wide range of daycare, primary, elementary, and secondary education facilities, including traditional public and charter schools, (2) improve the access of rural communities to resources provided by both Departments, (3) make capital available through USDA for strengthening existing or constructing new educational facilities, and (4) provide capacity building and technical assistance.
- b. **Catalog Federal Training Programs** – Federal government training programs should be catalogued on a single online platform to improve access to these materials and programs.
- c. **Encourage Interagency Use of Federal Infrastructure** – The Department of Agriculture has a broad physical network with local and regional offices across America. We encourage all federal agencies to partner with the Department of Agriculture to house certain educational materials or host periodic training programs in those local offices.

5. **Ensure Access to Lawful, Agricultural Workforce** – Production agriculture is often a key economic driver in rural communities. Many on-farm jobs are seasonal and very physically demanding. Farmers often have difficulty finding American citizen and lawful permanent resident workers to fill these jobs. This can lead some farmers to scramble to find workers to plant, prune, and harvest fruits and vegetables or to tend to livestock. As labor instability grows, seasonal farmers are increasingly turning to H-2A visa program to ensure that their foreign-born workers are working legally in the United States. The inefficiencies and administrative burden of the H-2A program are well-communicated by farmers. The White House is addressing farmers' concerns through an interagency effort to implement policy and regulatory changes to improve the program H-2A program. The goal of this initiative is to ensure that farmers have access to the lawful workforce that is needed.

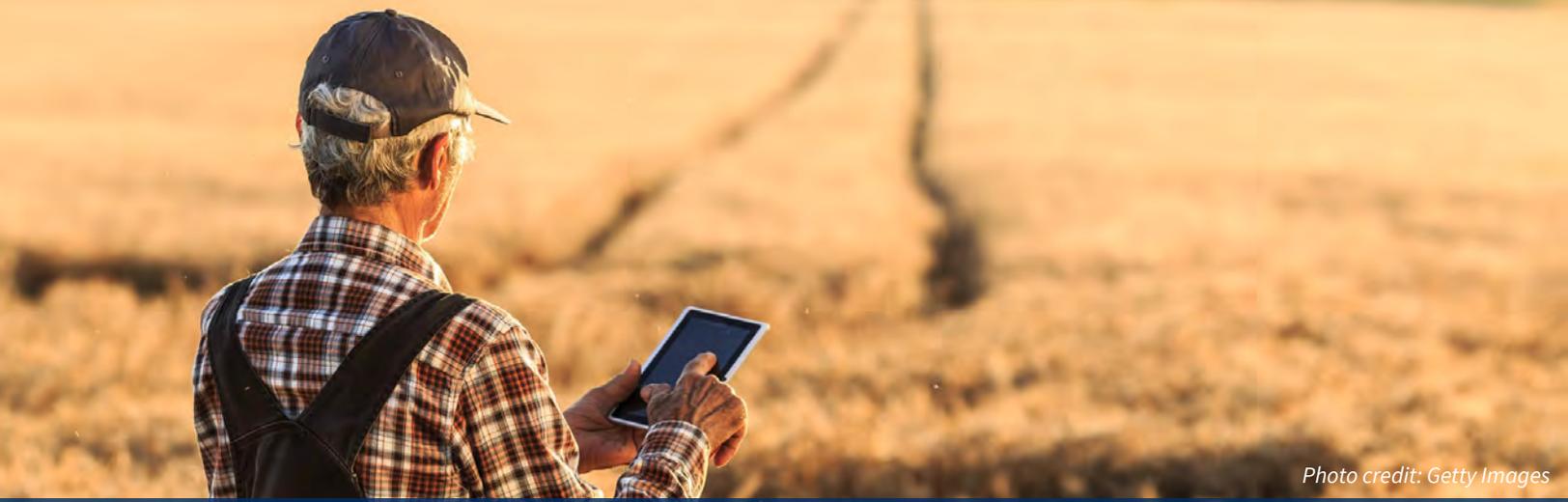


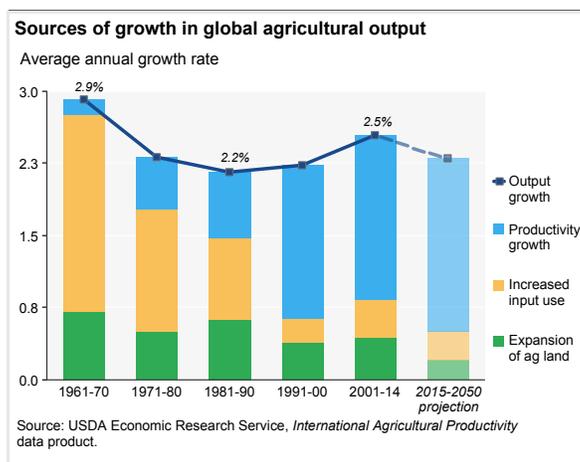
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Call to Action #4: Harnessing Technological Innovation

By 2050, the U.S. population is projected to increase to almost 400 million people, and rising incomes worldwide will translate into historic global growth in food demand. To feed a hungry world, we will need to harness innovation to increase output across American farmlands. In addition to increased crop yields, technological innovation can improve crop quality, nutritional value, and food safety. Innovations in manufacturing, mining, and other non-agricultural industries can enhance worker efficiency and safety. At the core of these developments that will further grow the rural economy is the expansion of STEM education, research, regulatory modernization, and infrastructure. Leveraging these innovations in an increasingly data-driven economy will also require further development of rural data management capabilities.

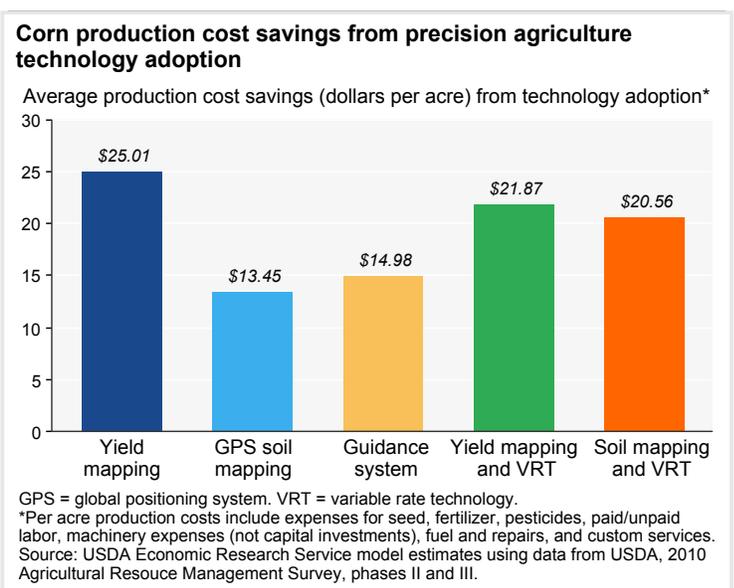
From agriculture to manufacturing to mining, innovative technologies and practices drive long-term growth and prosperity in rural America. The United States is the world leader in agricultural production and technology, and rural America is home to many of the best, and most innovative farmers in the world. Over the past 30 years, U.S. agricultural productivity has increased by nearly 50 percent, and by almost 14 percent in the 21st century (Wang et al., 2017). High productivity has enabled U.S. agriculture to be the world’s most dependable source of food surpluses to help feed a hungry world.



According to the U.S. Census, the U.S. population is projected to increase to 400 million people by 2050. As the world’s leader in farm production and innovation, the United States can leverage emerging agricultural technologies and innovative practices to meet the economic opportunity and the humanitarian imperative. Further, while working to meet this challenge in just 32 growing seasons, it is critical that productivity growth not rely on more cultivated land, water, or energy, but instead harness the power of innovation and technology. The U.S. contributes to global food security not only by being a breadbasket, but also through advances in food, agricultural and nutrition sciences, and their world-wide dissemination.

Enabling technological innovation in agriculture will improve the efficiency of the American farmer, increase sustainable use of American resources, and enhance the quality of American agricultural output, all while creating new American jobs and increasing rural incomes. Over the past two decades, American farmers have led high rates of adoption of technologies including automated farm equipment, satellite and aerial imagery, variable rate technology (VRT), genome editing and genomic selection, and high-speed internet.

Precision agriculture technologies that optimize input application using VRT are playing an increasing role in farm production. To determine the optimal application of inputs, farmers require data on field conditions to calibrate production practices. Technologies such as global positioning system (GPS) guided machinery, soil and yield mapping, embedded sensor networks, and aerial imagery increase capabilities to collect data with sufficient temporal and spatial resolution. The addition of GPS technologies on farm vehicles has enabled greater automation of routine farm tasks, and provided field operators access to timely, accurate crop data to improve seeding of field crop rows. Integrated networks of soil sensors that provide data on moisture and nitrogen fixation, satellites, and unmanned aircraft systems (UAS) equipped with multispectral sensors provide maps of crop yield variability. VRT enables farmers to increase crop yields, while reducing water usage, and minimizing the need for fertilizer, chemicals, and pesticides.



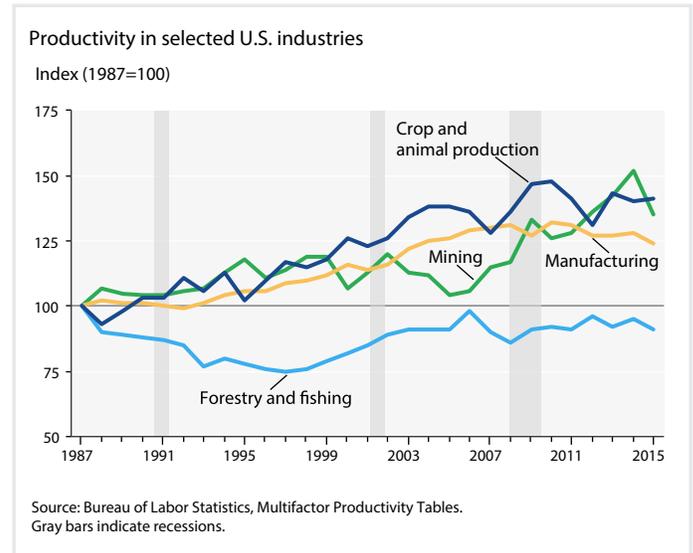
If the ease of use and cost of implementation of precision agriculture technologies can be improved, they have the potential to boost profits for more producers as well as yield environmental benefits. Utilizing key precision farming technologies can produce a 3-18 percent boost in crop yield via targeted fertilizing, planting, spraying, and irrigation, according to Goldman Sachs Global Investment Research. In addition, case studies conducted by AgPixel found there are savings to be gained with better use of products such as nitrogen, herbicide, and water that can add up to \$28 per acre. Such gains could mean the difference between successes or failure for many agriculture-based businesses.



Biotechnology is another area of U. S. leadership, being a sector that has driven innovation in fuels, chemicals, manufacturing, and agriculture. In 2016, biotech crops were grown on over 170 million acres in the United States, including over 92% of corn, soybean and cotton total acreage, according to the Department of Agriculture’s National Agricultural Statistics Service. Globally, the biotechnology sector is a driver of the “fourth industrial revolution,” and presents an incredible opportunity for American farmers and rural communities to thrive at the forefront of innovation. Scientific advances in biotechnology from universities have helped create world class firms that export superior crop seed and other biotech innovations in world markets. Advancements in genome editing and genomic selection have produced favorable crop and livestock traits,

including resistance to drought, disease, and heat; enhancements to nutritional value; and increased resource efficiency. Those technologies, combined with public and private research and development investments, have enabled U.S. farmers to increase the supply and quality of crop and livestock commodities using fewer resources and at lower costs of production.

Productivity improvement in primary industries can increase the profitability, competitiveness, and growth of upstream manufacturing sectors such as food manufacturing, textiles, and wood products. It can also create jobs in the processing industries - transportation and finance - which are needed to support those sectors. However, productivity growth has slowed over the past three decades, especially in the forestry and fisheries sector. Employment in the mining sector, which accounts for a higher share of employment in rural areas compared to urban centers, has trended downward in recent years. In general, studies have found an urban innovation advantage over rural areas in non-manufacturing sectors, especially service sectors.



Non-agricultural rural industries that have shown high levels of innovation include the telecommunications and commercial electronics industries (Wojan & Parker, 2017). With these markets leading the way in rural innovation, the need for high-speed internet access in rural America is heightened.



Photo credit: Getty Images

Prospects for innovation in agricultural and food industries are evidenced by their attractiveness to private-sector venture capital. Recent years have seen a sharp increase in venture capital directed at these sectors, especially for information technology and biotechnology innovations. According to AgFunder, during 2014-15, venture capital funds invested at least \$6.9 billion in a range of agriculture-related innovations, including precision agriculture and e-commerce food marketing. Most of these venture capital investments have been directed at U.S. firms, but some have involved major investments with firms located in Europe, Israel, China, and elsewhere.

Federal and state research institutes use a variety of means to collaborate with the private sector. Some of the venture capital startups are spinoffs from innovations developed in these laboratories or through joint research efforts with private firms. Other major contributors are the more than 100 federally-funded U.S. Land Grant Colleges and Universities, which are key providers of STEM training as well as innovators across many sectors, and have contributed to U.S. world leadership in many high-technology fields. Innovations emanating from these institutions find their way into industries through scientific publications, patents, direct university-industry partnerships, and STEM-trained graduates. Furthermore, these institutions help create internationally-competitive firms and industries.

Many of the innovative and high-tech advances discussed above emanate from educating rural Americans. Ensuring that all rural Americans have access to educational opportunities is critical to enhancing

productivity and competitiveness throughout America. Educational achievement highly correlates with measures of regional economic prosperity and recent data show that rural Americans are increasingly well educated. According to the U.S. Census Bureau, only 15 percent of rural adults ages 25 and older do not have a high school diploma, and nearly 3 out of 10 rural adults now have an associate's or bachelor's degree or higher. These data suggests rural America is well-positioned to ensure the flow of new technologies and innovations that are required for rural prosperity.



Photo credit: Getty Images

Despite American leadership in technological innovation in agriculture, federal regulations are currently limiting both precision agriculture and biotechnology applications. For example, UAS can provide aerial crop surveys with greater resolution than satellite imagery, and at a frequency desired by farmers. However, the Federal Aviation Administration regulations on commercial UAS operations limit the ability of farmers to conduct these surveys for precision agriculture applications.

On the biotechnology front, better coordination of the Department of Agriculture, Environmental Protection Agency, and Food and Drug Administration regulations on genetic modification of crops and livestock is needed to reduce barriers to commercialization of safe, beneficial and improved genetically engineered entities. Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation.

In addition, the growing rural needs for large data collection and processing require the necessary communications infrastructure to handle the quantities of data needed. Big Data is proliferating across all aspects of the global agricultural supply chain and will require policy development that protects farmers' privacy, U.S. companies, and U.S. national security interests, if the information revolution is to be fully realized in rural America.

Objectives & Recommended Actions

1. **Coordinate Federal Farm Production and Food Safety R&D** – To sustainably feed the world, ensure a safe food supply, and keep families on the farm, modern science and technology must be applied. The U.S. needs research and development, as well as a regulatory system that promotes rather than discourages innovation and discovery. The National Science and Technology Council (NSTC) should extend the charter of the Subcommittee on Food and Agriculture to coordinate strategies across the federal government to advance innovation in food and agriculture R&D. The Task Force recommends that the subcommittee catalog, coordinate, and leverage ongoing investments in technology to drive innovation in rural America and deliver safe, transformative technologies to farmers and consumers. The subcommittee should also develop an R&D strategy that identifies and creates opportunities for the technology sector to invest in rural communities.
2. **Improve Rural Management of Big Data** – The U.S. government needs a plan and a stronger vision for how big data can be better leveraged to revolutionize the agricultural sector. The NSTC Subcommittee on Food and Agriculture should develop best practices for big data management in agricultural applications.

3. **Increase Public Acceptance of Biotech Products** – The Department of State, the Department of Agriculture, and other relevant agencies should develop a communications strategy to increase acceptance of biotech products and open and maintain markets for U.S. farmers abroad. To complement this strategy, the U.S. Trade Representative should initiate interagency deliberations to identify an international strategy that removes unjustified trade barriers and expands markets for American products.



4. **Develop a Streamlined, Science-based Regulatory Policy for Biotechnology** – The federal government should continue efforts to modernize the federal regulatory system for biotechnology products. These efforts will improve transparency, coordination, and predictability of the system and support public confidence by assessing products in a risk-based manner, providing predictable pathways for commercialization. These efforts should be continued to ensure the success of consumers, farmers, and their products. More efficient and effective communication must be employed to build evidence-based confidence in the safety of products for health and the environment. It is critical that these improvements: (1) maintain high standards that are based on the best available science and that deliver appropriate health and environmental protection; (2) establish transparent, coordinated, predictable, and efficient regulatory practices across agencies with overlapping jurisdiction; and (3) promote public confidence in the oversight of the products of biotechnology through clear and transparent public and diplomatic engagement. The Task Force recommends that the Administration:
- a. **Coordinate Federal Regulation of Biotechnology Products** – Reaffirm strong support of the Coordinated Framework for the Regulation of Biotechnology, and the corresponding National Strategy for Modernizing the Regulatory Systems for Biotechnology Products.
 - b. **Coordinate Interagency Action Through the Office of Science and Technology Policy** – Endorse and empower the Biotechnology Working Group, led by the White House Office of Science and Technology Policy, to continue cooperation across relevant government agencies and improve science-based regulatory approaches directed in 2015 by the White House memorandum to federal agencies, including: updating science-based regulations navigable by small and mid-sized innovators and promoting understanding of how a risk- and science based regulatory approach effectively protects consumers.
 - c. **Expedite Commercialization of Biotechnology Products** – Create a forum led by the White House Office of Science and Technology Policy that connects regulators with the funding and R&D agencies to increase awareness and speed the safe commercialization of novel biotechnology products.
5. **Enable Rural Uses of Unmanned Technologies** – Federal regulations currently restrict many agricultural uses of unmanned aircraft systems (UAS). The FAA should expedite regulatory waiver approvals for low-altitude UAS operations in rural environments. State and local governments should be enabled to propose increased UAS operations in their jurisdictions to be considered by the FAA for streamlined regulatory waiver approvals. These could include rural communities seeking reduced restrictions on UAS operations for precision agriculture applications and improved production monitoring capacity.



Photo credit: USDA Flickr



Call to Action #5: Developing the Rural Economy

Infusing rural areas with stronger businesses and agricultural economies empowers America. Expanding funding options to increase the productivity of farmers and ranchers will lead to the enhanced viability and competitiveness of rural America. By promoting innovative farm technologies, energy security, recreation, agritourism and sustainable forest management, communities will be empowered to leverage the bounties of rural America. Investing in rural transportation infrastructure is needed for carrying more “Made in America” products to markets at home and abroad, and boosting our country’s global competitiveness. Reducing regulatory burdens and attracting private capital will support our ultimate mission of empowering Rural America to feed the world.

Economic development is enhanced by a supportive environment for business: an environment that encourages innovation and leverages existing resources. Rural areas have especially high concentrations of natural resource-related industries and manufacturing, providing considerable opportunity for meeting productivity goals. Additionally, the large number of baby boomers still to retire represents significant potential growth for many rural places. However, these opportunities may also introduce challenges. The steady decline in the employment shares of farming, mining, and manufacturing over the past half century is due in part to labor-saving productivity. Without substantial growth in the demand for these products, rapid productivity increases may further depress rural employment in these sectors. The challenge for rural economic development is to select strategies that encourage both expanding markets for existing products and exploring possibilities of new products that might require new types of jobs and skills.

Expanding markets through trade is one strategy for generating and sustaining economic growth. Programs and policies that promote overseas market development, such as assistance in understanding foreign market requirements and establishing networks, exist in many sectors and at both the federal and state level. More generally, U.S. and global trade are greatly affected by the growth and stability of world markets, including changes in world population, economic growth, and income. Other factors affecting trade are global supply conditions, changes in exchange rates, domestic support policies, and



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both tariff and non-tariff protections. Trade agreements generally increase trade, alter relative prices, and can change production systems and supply chains. Although increased access and support for export markets can be a growth opportunity for rural America, they can also increase competition from imports. However, the effects of trade may not be distributed evenly across regions or sectors. For example, some manufacturing industries are clustered in rural rather than urban areas. Food manufacturing, machinery manufacturing, and wood product manufacturing jobs account for larger shares of rural manufacturing jobs than urban manufacturing jobs, while computers, electronics, and chemical production account for larger shares of urban manufacturers.

In 2015, American farmers and ranchers relied upon exports for 19 percent of farm income, according to the Department of Agriculture. In 2016, their exports totaled over \$139 billion, making the United States the world's top agricultural exporter. Export success supports livelihoods of many family farms around the country and helps to provide revenue to support schools, public services, small businesses, and millions of jobs for rural America that are outside agricultural industries.



Since the agri-food sector accounts for a larger share of nonmetro employment than of metro employment, growth in U.S. agricultural exports is of greater relative importance to the economic prosperity of nonmetro communities. In 2017, a report using a computable general equilibrium (CGE) model explored the economic effects of a hypothetical 10-percent increase in foreign demand for U.S. agricultural exports (Zahniser et al. 2017). This demand shift was found to result in a 6.7-percent increase in the volume of such exports, worth \$9.7 billion at 2013 prices, and a net increase in total U.S. employment (all economic sectors) of about 41,500 jobs—above and beyond the nearly 1.1 million full-time civilian jobs that U.S. agricultural exports currently support. Some 40 percent of these new jobs would be created in rural (nonmetro) counties. The agri-food sector's share of regional employment is the main determinant of the percentage change in total regional employment in this simulation. Most parts of the agri-food sector (i.e., production agriculture plus food and beverage manufacturing) would see an increase in employment, while employment in other trade-exposed industries - most notably non-food-and-beverage manufacturing and mining - would decrease.

Growth in mining, especially shale gas and oil production, may also offer economic opportunities in rural areas, especially if energy prices rise. While shale gas and oil production has grown rapidly since 2005, growth in some production areas has slowed or reversed due in part to declining prices. However, other areas where production is still expanding may continue to experience rapid growth.



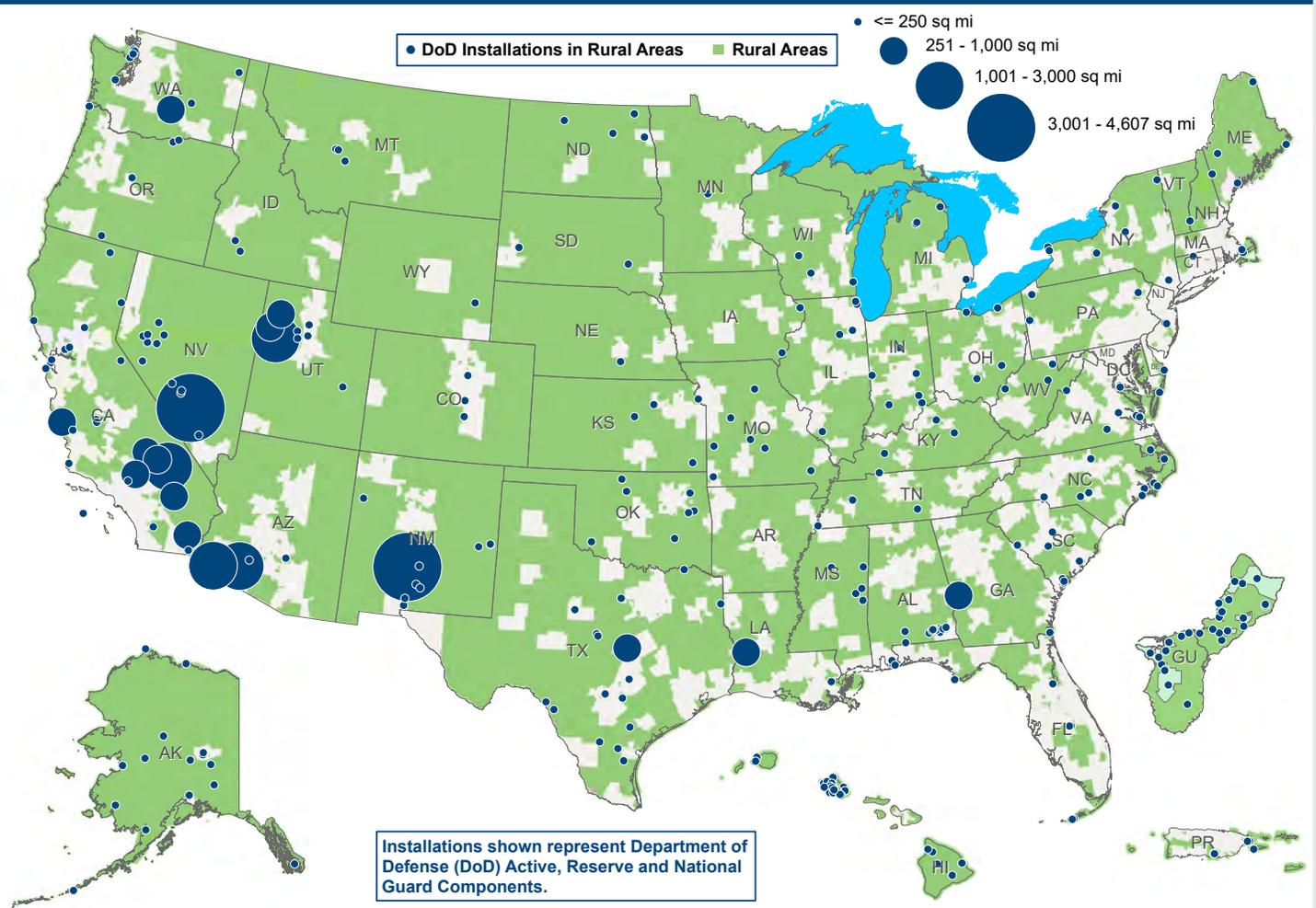
Movement of agriculture, mining, forestry, manufactured, and military freight would not be possible without transportation connectivity coast-to-coast, border-to-border, and between metropolitan areas. Rural America is home to many of the nation's most critical transportation infrastructure assets, including 444,000 bridges, 2.98 million miles of roadways, and 30,500 miles of Interstate highways, according to the Department of Transportation. More than half of all public road miles are locally-owned rural roads. Railroads moved 1.7 million tons of American freight in 2015. By 2045, the United States

Department of Transportation projects total freight on all modes (rail, truck, air, water, pipeline) to reach 25 billion tons, valued at \$37 trillion. The synergetic relationship between transportation investment and

economic development is based on accessible intermodal connections and sufficient infrastructure capacity that can efficiently move freight and people. Transportation also has a broader role in shaping development patterns and impacting location decisions of businesses and people. Rural transportation accessibility and connectivity are critical to transportation-dependent business sectors in rural areas. The nation's rural transportation network provides the first and last link in the supply chain from farm to market, while supporting the tourism industry, enabling the production of energy, and supporting military movements.

Military installations and contract spending of the Department of Defense are other important economic drivers in many rural locations. Rural manufacturing facilities and vendors are buoyed by the Department, providing goods and services for our nation's military forces. According to the Department of Defense, almost half of all their service contract spending occurs in rural areas, to the tune of \$5.4 billion dollars in Fiscal Year 2015. The opportunity to increase such an economic driver is substantial as the total rural share of all types of contract spending was only about \$10 billion of the total \$273 billion.

Department of Defense Installations in Rural Areas (337 total)



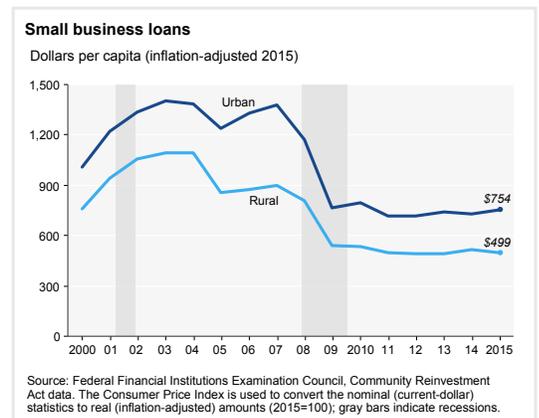
This map is shown at the National Scale. Defense installations that appear to be in Non-Rural Areas at the National Scale are included in Rural Areas when zoomed in to the County Level. Rural Areas are defined as US Counties in Non-Metropolitan Statistical Areas (MSAs) that also fall within US Census Tracts that have a Rural-Urban Commuting Area (RUCA) Code of 4-10. All data are current as of Fiscal Year 2015 and was acquired / processed from all DoD Components and the Washington Headquarters Services (WHS).



In addition to military installations supported by rural communities around the country, the Department of Defense, in cooperation with the states, maintains over 3,500 National Guard and Reserve centers mostly in rural areas to train military forces and maintain equipment. These centers also serve as local disaster relief and support centers for rural communities. Defense also relies on thousands of vendors and manufacturing facilities in rural areas to serve the defense industrial base by providing goods and services for our nation’s military forces. Defense also has over 5,000 formerly used defense sites, mostly in rural areas, awaiting remediation that would allow for eventual economic redevelopment by local communities.

In Fiscal Year 2015, more than 42 percent of Active Duty enlisted personnel came from non-urban areas.² In addition, veterans are overrepresented in rural America by almost 20 percent and can provide valuable and needed skillsets. A huge opportunity exists for rural communities to reach these key populations. According to the American Community Survey, in total, the share of all post-9/11 veterans residing in rural areas in 2015 was 11.9 percent while the share of all pre-9/11 veterans residing in rural areas was 15.5 percent. Veterans are not evenly spread across the rural-urban landscape, either. Many areas with post-9/11 and combined veteran concentrations were near military installations, reserve centers, or training areas, where transitioning veterans are most likely to remain once they leave military service.

Access to capital to support investments in entrepreneurship, innovation, and growth may be more daunting in rural areas where fewer alternatives to conventional bank loans exist, relative to urban areas, which also have easier access to venture capital, angel investing, and emerging crowdsourcing models. Lending of all types to small businesses is consistently lower in rural areas compared to urban areas, and has yet to recover from the Great Recession of 2007-09. Because new, small firms are the major source of employment growth in both urban and rural economies, limited credit availability today may adversely affect near-term and long-term job growth. For example, recent research suggests that smaller, independent manufacturing plants had higher survival rates than larger plants and multi-unit plants, such as branch plants (Low 2017). Of course, there are two sides to the credit market and a decline in the demand for small business credit due to lower new business formation rates may be part of the explanation.



The healthcare sector also provides ample opportunities for rural economic development. For every job in a rural hospital, an additional 0.34 jobs are created in other businesses in the local economy. For every dollar in salary and benefits a rural hospital pays staff, an additional 19 cents in secondary wages and benefits is generated in the local economy (Doeksen et al., 2016). As of September 2017, 60 percent of Health Professional Shortage Areas, as identified by the Department of Health & Human Services, are in rural America and encompass 22.2 million rural residents.

2 Non-urban areas defined as Town & Rural segments. These areas contain households that are classified with one of those two urbanicity classifications. The population density scores where they are found range from 0 to 40. This category includes exurbs, towns, farming communities, and a wide range of other rural areas. The town aspect of this class covers the thousands of small towns and villages scattered throughout the rural heartland, as well as the low-density areas far beyond the outer beltways and suburban rings of America’s major metros. Households in the exurban segments have slightly higher densities and are more affluent than their rural neighbors. DoD Population Representation report 2015 (<https://www.cna.org/research/pop-rep>) page 125.

Overall, identifying key regulatory reforms, streamlining processes, and improving interagency coordination is required to create conditions in which the rural economy can thrive. For example, the cost of providing or restoring clean water for a community of only a few hundred citizens can be upwards of hundreds of thousands to millions of dollars. Without the financial assistance of the federal government, these projects would be impossible to afford. While federal agencies can often provide most of the funding necessary, either in the form of loans or grants, communities must still provide some portion of the financing. In addition to the cost of the construction, communities must also be able to afford to get their projects through the approval process. Even for small projects, the complexity of the environmental review process alone, requiring the coordination of various state and federal agencies and the services of a professional environmental consulting firm, can cost more than \$20,000. While that may be affordable for a city, for a small rural community this extra cost can be a deal-breaker. That means for some communities, residents must go without even the most basic of public services.

Objectives & Recommended Actions

1. **Access to Capital** – Rural business men and women, entrepreneurs, as well as beginning farmers and ranchers, often have difficulty accessing capital to help them start, grow, and expand their businesses. They are often either too large or too small to qualify for, or gain access to, available loans and lending programs. In addition, Wall Street and Silicon Valley have struggled to access rural markets which are therefore not primed to take their cash. Agricultural lenders tend to operate far differently than venture capital firms and global private investors. With the number of small and community banks declining, we need to help communities identify and develop projects appropriate for private investment. The Task Force recommends that future strategies include:
 - a. **Equity Financing** – Allowing new obligations in federal and state loan and credit programs to be used to meet equity requirements, or a first-loss-position, could help rural communities bring additional financing to the table.
 - b. **Debt Financing** – With renewed focus and goals for agricultural and non-agricultural lending in rural counties by both the Department of Agriculture and Small Business Administration (SBA), SBA is able to provide loans up to \$5.5 million.
 - c. **Bundle/Repackage Projects and Deals** – A legal/finance vehicle to bundle projects can bring the necessary scale to attract private sector interest and take advantage of economies of scale to deliver cost savings.
 - d. **Regional and State Collaboration** – Projects can draw upon larger revenue streams when approached regionally. There are more financing options and deeper expertise when state wide and regional entities are involved.
2. **Leverage Existing Market Opportunities** – Larger and more strategic public-private sector opportunities should be sought for rural America. Locally-transformative actions create jobs and lift up local economies. Many of these opportunities languish in regulatory uncertainty, or struggle with volatile economic risk profiles. Among the expertise within the federal family, lies the opportunity to make a big difference in the lives of rural families, farmers and ranchers. We should engage the private financial sector and work to identify opportunities already in their pipeline. The federal government could provide guidance to find ways to help capital markets expedite deal execution that quickly benefit rural economies.

3. **Create a Rural Prosperity Investment Portal** – A web based portal enabling rural based investment partnerships – public or private – will serve as a matchmaking tool for project promoters to reach domestic and international investors. The portal can mobilize investments, promote economic growth and create more jobs across rural America. In partnership with the Opportunity Project, the proposed Commission on Agriculture and Rural Prosperity should coordinate with the Department of Commerce and the Department of Agriculture to engage the tech sector through the creation of digital tools that expand rural prosperity, such as an investment portal. The Opportunity Project involves collaboration across government agencies, local governments, tech companies, community organizations, and more, to create new digital solutions that help families, businesses, local officials, and other members of the public access economic opportunity. To date, over 45 digital tools have been created by tech companies through the Opportunity Project.
4. **Build a Better Tax Code** – Rural Americans who work hard every day to provide food, fiber, fuel, manufactured goods, and services for their fellow citizens shouldn't be overburdened by the tax collector. Reforms to federal tax policy are long overdue. Most family farms and rural entrepreneurs operate as small businesses, where the line between success and failure is razor thin. Add to that the complexity and costs of merely complying with the tax code, and their budgets are stretched even tighter. The federal government should build a better tax code to encourage investment, create jobs and help Americans keep more of their hard-earned money.
5. **Increase Agricultural, Forestry and Food Production** – With world food demand expected to double in 40 years, leadership is necessary to meet this economic opportunity and humanitarian imperative. Keeping future generations on the farm is one of the best ways to ensure that the demand for food, fiber, and energy production is met. Family-run operations provide economic and social continuity to their communities across generations, so federal policies should encourage their transfer to family members willing to remain on the farm. For example, key community stakeholders, including grocery stores, distributors, value-chain actors, universities, and more, will soon be able to engage and franchise a community economic development model as well as share success stories. In addition, local, regional, and state leaders will be convened to engage in a discussion on effective methods of economic development and coordination with federal investment as well as to discuss how federal, regional, state and local incentives and regulations can support and/or hinder agriculture in their area. This coordination will result in "Agricultural Community Economic Development" model tool kits being developed and deployed for the Department of Agriculture, rural partners, and farmers.
6. **Remove Regulatory Barriers to Developing and Accessing Natural Resources** – Rural communities are often rich in natural and renewable natural resources, energy sources, and minerals. These communities should be able to responsibly and sustainably access, use, and profit from those local assets without undue federal restrictions and intervention. The Task Force recommends that the following actions be initiated within the federal government: improve interagency coordination to reduce process burden through environmental analysis and decision-making efficiencies; streamline consultation processes using standard decision-making templates and implementing regulatory changes; integrate digital service systems to improve customer service, and reduce delivery of services; develop and test the issuance of permits electronically (e-Permitting); and, develop and implement a modernized 'special use' permitting system, including a web-based ePermit system that offers



convenience and a high-quality user experience to the public. Components of this system are already taking shape between the Department of Agriculture and Department of Interior.

7. **Regain American Energy Dominance** – Rural America is a source of resources that can fuel the nation and the world. Boosting production of all sources of energy from natural gas, oil, coal, nuclear, and renewables is essential to America’s national security interest and rural America’s economy. The federal government must ensure a regulatory environment which can unleash this potential while keeping Americans safe and healthy. This increase in production of domestic fuels will bring jobs back to rural America and promote energy security. We must also continue research and development for new sources of energy to ensure that America leads the world in innovative energy sources. Overall, this boost in energy production will benefit rural communities, boost U.S. tax revenues, and increase our power in the global energy market.
8. **Rebuild and Modernize Rural America’s Infrastructure** – The economic success of future generations and rural communities depends on rehabilitating transportation infrastructure, closing the infrastructure gaps within rural communities, and enhancing connection to metropolitan areas.
 - a. **Increase “Made in America” Outputs** – Increasing “Made in America” output in agriculture, manufacturing, forestry, and mining requires investment in capacity and modernization of rural infrastructure to connect rural production facilities and businesses to nationwide and global commerce. Increased output will result in unleashing the full potential of the U.S. economy and the creation of rural job opportunities, ensuring that rural areas are attractive and prosperous places to live for generations to come.
 - b. **Address Commercial Infrastructure Gaps** – The key infrastructure gaps that need to be addressed are those that carry commerce for rural America, especially in the first and last mile. Transportation infrastructure of all modes – roads, bridges, railways, and waterways – must be upgraded and expanded with the capacity needed to accommodate the additional crops and products that are made in America’s rural economies, including food, fiber, forests, and factory-made commodities and specialty-goods.
 - c. **Develop the “Digital Superhighway”** – The “digital superhighway” for connectivity must be built out to support rural economies’ connection to all applications of global commerce, including support of data transfer needed for the Internet of Things and future deployment of autonomous vehicles. In the short term, better collaboration among the Department of Transportation, Department of Agriculture, Army Corps of Engineers, Department of Energy, and others will enable the strategic rehabilitation and build-out of the infrastructure needed to carry freight to, within, and from rural production sites in today’s and tomorrow’s economy.
 - d. **Expand State and Local Transportation Capacity** – Empowerment of state and local governments to expand and maintain infrastructure will ensure rural transportation capacity supports local and regional demands for freight flow.



9. **Cutting Red Tape** – To ensure the quickest and most effective deployment of new investments in infrastructure, federal environmental permitting must be simpler and speedier. Regulatory reforms, streamlining processes, and improving interagency coordination must occur to create conditions in which the rural economy can thrive from the farm gate and small business up through the value-added chain. Our federal actions must also be as customer-centric as possible and we must ensure that our regulations and policies are up-to-date, necessary, and effectively achieving their purposes, while simultaneously being as affordable and consistent as possible. If inconsistencies or interferences with reform initiatives, or actions that eliminate jobs or inhibit job creation are identified, we must take steps to lessen or remove their negative impacts. One such action that can be taken in the short term is to fully implement One Federal Decision (OFD) and FAST-41 policies and recommendations within environmental authorization actions. All federal agencies should actively participate in all FAST-41 and OFD working groups to ensure that any lessons learned are applied to improve environmental authorization processes.
10. **Increase Access to Global Market** – Based on fair trade principles, international market access must be aggressively pursued and supported. Physical infrastructure and e-connectivity must be improved and maintained to connect farms and rural communities to the world. American agriculture needs and deserves policies that support and build on this success - by opening markets abroad; by ensuring fair and science-based regulatory treatment for American products of all kinds; and by implementing strong enforcement policies that hold trading partners to their commitments. In the next three years, our administration will take on challenges ranging from high tariffs on dozens of products – including meats, dairy, rice, soy, wheat, fresh fruit and vegetables, and more – to unscientific regulation of biotechnology products and other goods; inappropriate use of geographical indications in ways that shut out American producers of wines, cheeses, and other high-value products; and escalating levels of domestic supports in large emerging economies. We will address these through fair negotiations, use of World Trade Organization and Free Trade Agreement dispute settlement rights, and all other means at our disposal.



Literature Cited

- Doeksen, G. A., St. Clair, C. F., and Eilrich, F. C. 2016. "Economic Impact of a Representative Critical Access Hospital on a Rural Community." National Center for Rural Health Works. July.
- Environmental Protection Agency. 2013. "The Importance of Water to the U.S. Economy: Synthesis Report," U.S. EPA Contract EP-W-10-002. U.S. EPA Office of Water. Washington, DC.
- Kearney, M. S., B. H. Harris, B. Hershbein, E. Jacome, and G. Nantz. 2014. "In Times of Drought: Nine Economic Facts about Water in the United States," The Hamilton Project, Brookings Institution Policy Memo. Washington, DC. October.
- Kuttner, H. 2016. "The Economic Impact of Rural Broadband". Hudson Institute, Arlington, VA.
- Low, S. 2017. "Rural Manufacturing Resilience: Factors Associated with Plant Survival", 1996-2011. Economic Research Report No. ERR-230, USDA, Economic Research Service, May.
- Marré, A. 2017. "Rural Education at a Glance 2017 Edition." Economic Information Bulletin 171, USDA, Economic Research Service, April.
- National Agricultural Statistics Service. 2017. "Farm Computer Usage and Ownership." USDA, August.
- Schimmelpfennig, D. 2016. Farm Profits and Adoption of Precision Agriculture, ERR-217, U.S. Department of Agriculture, Economic Research Service, October.
- Wang, S. L., Nehring, R., and Mosheim, R. 2017. "Agricultural Productivity in the U.S.," Website, U.S. Department of Agriculture, Economic Research Service. Available at: <https://www.ers.usda.gov/data-products/agricultural-productivity-in-the-us/agricultural-productivity-in-the-us/> Accessed: October, 2017.
- Wojan, T. and Parker, T. "Innovation in the Rural Nonfarm Economy: Its Effect on Job and Earnings Growth", 2010-2014, ERR-238, U.S. Department of Agriculture, Economic Research Service, September 2017.
- Zahniser, S., T. Hertz, P. Dixon, and M. Rimmer. 2017. "The Potential Effects of Increased Demand for U.S. Agricultural Exports on Metro and Nonmetro Employment." Economic Research Report No. ERR-227, USDA, Economic Research Service, April.

