Testimony of Thomas J. Vilsack
Secretary of Agriculture
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Madam Chairwoman, Ranking Member and Members of the Committee, thank you for the opportunity to discuss U.S. agriculture's role in feeding a growing world population and the challenges, risks and implications involved.

Agriculture is a critical driver of American jobs, export growth, and economic recovery. With expanding middle classes and populations, global demand for quality, plentiful food is at an all time high. American farmers and ranchers are leading the effort to respond to that demand.

Yet the risks that our farmers and ranchers take are significant. One only needs to look at the past few months to see firsthand the tremendous challenges our producers face that are beyond their control. This spring cool temperatures combined with above normal snowfall and excessive rainfall have delayed planting for spring crops and caused widespread flooding, especially along the Mississippi River. Over two million acres of cropland had been flooded, much of which continues to remain underwater.

As the Secretary of Agriculture, I see personally the risks that our farmers face every day from natural disasters, uncertain markets, and price volatility. Our farm families are among the hardest-working people in the world – a world they strive to provide with safe and affordable food. These recent disasters illustrate the importance of a strong and effective safety net for those producers who truly need it.

The U.S. agricultural sector must remain efficient and competitive through a combination of smart policies, sound research, and innovative technology. With such support, U.S. producers will not only take advantage of market opportunities around the globe to continue to drive job creation at home, but also provide nutritious and affordable food for the world.

The Challenge to Meet Global Food Needs

Growing population and incomes in emerging and developing economies will add significantly to the demand for food over the next 40 years. According to the U.N. Food and Agricultural Organization (FAO), there is an estimated 925 million people around the world who currently suffer from hunger. Each year, more than 3.5 million children die from under-nutrition. The United Nations projects that the world's population will reach 9.3 billion by 2050, up 2.3 billion from today and, continue to grow to 10.1 billion by 2100. Much of this increase is projected to come from regions currently facing the greatest level of food insecurity. At the same time, per capita incomes in 2050 are projected to be higher, creating middle classes that demand more and higher quality food as well as higher input products, such as beef. With these two pressures of population growth and rising incomes, it is estimated that the demand for food will rise by 70 to 100 percent by 2050.

To meet this need, the FAO estimates that production in the developing countries will need to almost double. Annual grain production will have to grow by almost 1 billion metric tons while meat production will have to grow by over 200 million metric tons.

A wide variety of factors threaten to exacerbate the challenge to sufficiently increase production, including weather and climate change, environmental degradation, water scarcity, and loss of agricultural lands to non-agricultural use. The gap between supply and demand puts pressure on food prices, especially in middle income countries where as much as 50 percent of household expenditures may be spent on food. This can cause poorer consumers to seek cheaper food sources that may be less nutritious (damaging future potential) or divert scarce household resources away from other basic needs such as health or education.

In recognition of these trends and challenges, at the G8 Summit in L'Aquila, Italy in July 2009, global leaders committed to "act with the scale and urgency needed to achieve sustainable global food security." In support of this multinational effort, the President's Global Hunger and Food Security initiative, Feed the Future (FTF), which is led by the U.S. Agency for International Development, attacks the root causes of global hunger through accelerated agricultural development and improved nutrition. The Administration's commitment to catalyze agricultural-led growth will raise the incomes of the poor, increase the availability of food, and reduce under-nutrition through sustained, long-term development progress.. Through the U.S. government's leadership in global food security efforts, we advance global stability and prosperity by improving the most basic of human conditions – the need that families and individuals have for a reliable source of quality food and sufficient resources to purchase it. We support income growth that builds middle classes and new markets critical to our own economic prosperity.

Meeting the Challenge through Research

In general, there are three ways agricultural production can increase. First, we can devote more land to the production of agricultural commodities. Second, we can increase the yield on agricultural land by applying more manufactured inputs such as fertilizer. Third, we can improve the efficiency of farming by adopting new technologies or farming practices. Over the past 50 years, the first two factors, greater land and manufactured input use, have contributed to a little over one-half of the average annual growth in agricultural output while efficiency improvements have accounted for the remaining share of growth. However, as more agricultural land is converted to non-agricultural uses and manufactured input use is tempered by environmental concerns, the role of new technologies and farming practices become more important. The Economic Research Service (ERS) estimates that in the past decade, improvements in farming practices and technological change accounted for almost 70 percent of increased global agricultural output.

Investments in agricultural research are critical to meet the expected 70 percent increase in agricultural production required to provide sufficient food to the world's growing population by 2050. Emerging technologies hold the promise of creating crops that better tolerate drought, toxicity, disease and salinity. These innovations benefit not just developing countries, but our own country. Research on the adaptation of crops to better cope with climate change, production

of livestock vaccines to treat recalcitrant infectious diseases, and efficiency in water and energy use in agriculture are critical to both the national and global agricultural base.

In addition, many new technologies, including biotechnology, conservation tillage, drip irrigation, integrated pest management, and new multiple cropping practices have raised the efficiency and productivity of agricultural resources over the last decade. Biotech crops have already increased farmer income by decreasing pesticide use and increasing yields by decreasing crop loss due to insects and disease. New crops such as rice bio-fortified with vitamin A and bio-fortified bananas will increase nutrition, and drought and salt tolerant rice varieties will help address shifting environments due to climate change. Biotechnology will enable farmers to grow these crops in a quarter of the time needed through conventional breeding programs. While we recognize there are limitations on the use of this technology, biotechnology is part of a package of new technologies that will increase agricultural production and reduce poverty and under-nutrition.

The Importance of Trade in Addressing Food Needs and Driving American Prosperity

Enhancing production alone is not sufficient to address future food needs. FAO estimates that net grain imports by developing countries will increase three-fold by 2050, and will then account for about 14 percent of total grain consumption in those countries, up from 9.2 percent in 2006/07. As the world's largest agricultural exporter, the U.S. agricultural sector will continue to play a significant role in meeting those future food needs.

Exports are critical for U.S. agriculture. Over many decades, U.S. agriculture has shown an ability to increase output while reducing costs. Without any change in demand, this growth in productivity would cause prices to fall. For many agricultural products, the main opportunity for further growth in demand has been in export markets. U.S. farmers export almost half of their wheat and rice, over one-third of their soybeans, and over 15 percent of their poultry. For many high-valued products, export dependency is greater —about 70 percent for almonds, over 40 percent for walnuts, and 25 percent for apples. The prices farmers receive and income they earn from these products would be sharply reduced if producers lost access to export markets.

Agricultural exports also play an important role in U.S. economic prosperity. According to ERS, in 2009, every dollar of direct export sales generated another $1.31 in supporting economic activity. Agricultural exports create jobs not only on farms, but also in processing, transportation, and supporting activities. Some 828,000 jobs were generated from agricultural exports in 2009, including 541,000 in assembling, processing, and distributing products for export. These export-related jobs and other business-related gains benefited all regions and sectors of the U.S. economy.

Current levels of trade, as well as future growth, depend not only on commercial considerations but also on the rules that countries follow. The global food system has significant stake in fair, orderly, and open agricultural trade. Multilateral trade negotiations have improved the international trading system by lowering trade barriers, making the system more transparent, and establishing rules for dispute settlement. To that end, the United States has been engaged with other like-minded countries in pursuing further trade liberalization under the auspices of the World Trade Organization's Doha Development Agenda round of trade negotiations, even as

additional progress remains elusive. At the same time, we are pursuing regional trade initiatives, such as the Trans-Pacific Partnership, and are working closely with Congress to implement bilateral trade agreements with Korea, Panama, and Colombia. Taken together, these efforts will provide significant new export opportunities for our agricultural sector.

Trade policies like export bans only exacerbate food shortages. In 2008, export bans on rice spurred panic buying and hoarding, which made rice unaffordable from East Asia to West Africa to the Caribbean. Export bans undermine countries' confidence in the world trading system and can force countries to seek uneconomical goals of self-sufficiency through producer subsidies. Export bans can also discourage domestic farmers from increasing production. Rising food prices can have a positive effect if they send a signal to farmers to grow and sell more when there is transparency in markets and stocks so signals about prices and supply are accurately received.

International trade will remain crucial to even out supply fluctuations across the globe and to reduce market volatility. A liberalized global trade regime will enhance the ability of food-deficit countries to meet their food needs.

Tailoring Policy to Meet Future Needs

As we look forward, the risks and opportunities facing farmers and ranchers, as well as the opportunities available to them, will continue to change. The policies designed to meet those risks and create new opportunities are of vital importance.

Enhancing conservation. Conservation programs have an important role in long-term food security. Agricultural productivity is dependent upon climate, quality of land resources and pollinators. Environmental shifts such as climate change present threats to agricultural production systems as well as opportunities to improve and expand production. The distribution of weeds, diseases and insect pests may be altered by climate change and this will create new management challenges. Extreme events such as heavy downpours and droughts can reduce crop yields and crop quality. Higher average temperatures and extreme weather events can stress livestock and reduce their growth rates, weight gains, and productivity (meat, milk, or egg production).

Effective conservation will make farms and ranches more resilient to risks – whether these risks are from pests, disease, floods, or drought – and help producers adapt to the challenges of climate change. American farmers and ranchers understand that clean water, clear air and healthy soil are the raw materials for agricultural production. From generations of experience, producers know you cannot continually take from the soil without giving back, and they have made incredible strides to protect the land they rely on. Through programs such as the Conservation Reserve Program (CRP), the Environmental Quality Incentives Program (EQIP), and the Conservation Stewardship Program (CSP), USDA builds partnerships with farmers and ranchers to make agricultural operations more sustainable. USDA's conservation efforts improve soil fertility and reduce soil erosion, improve fertilizer and water use efficiency, reduce energy use, and enhance overall productivity.

At the same time we have been increasing agricultural production, soil erosion has been reduced by more than 40 percent and agriculture has gone from being the leading contributor to wetland loss to leading the nation in wetland restoration. For example, based on a survey of farms in the Chesapeake Bay Region conducted by the Natural Resources Conservation Service, it is estimated that conservation practices in the Chesapeake Bay have reduced edge-of-field losses of sediment by 55 percent, nitrogen in surface runoff by 42 percent, nitrogen in subsurface flow by 31 percent and phosphorus by 40 percent. These reductions are critical contributors toward restoring estuaries and rebuilding important fisheries.

These investments in private lands conservation are good for farmers and ranchers—reduced input costs directly help the bottom line, while improved soil and water quality help maintain and even enhance long-term productivity while mitigating regulatory pressures. These same investments in conservation work for all Americans and contribute to the food security of our nation and the world.

As we move forward, we need to accelerate the innovative approaches that allow market forces to play a more significant role in enhancing the environment. We need to develop the framework for clearly defined environmental or conservations programs that allow farmers and ranchers to be compensated for storing carbon, reducing runoff, and restoring wetlands and preserving biodiversity. While still in their infancy, environmental markets show promise for encouraging innovation and investment in conservation, improving accountability, reducing restoration costs, and expanding opportunities for agriculture.

Creating a cleaner and greener future. USDA's support for biofuels is an important part of a much broader commitment to a cleaner and greener future; an energy policy that reduces our dependence on imported oil; and a strategy that promotes jobs and economic growth in the United States. The United States imports about one-half of the petroleum we consume and the President is committed to reducing our imports of oil by one-third by 2025.

USDA's commitment has included investment in biofuels, biomass, wind, solar, geothermal, and hydroelectric power, as well as basic scientific research into second and third generation biofuels. In April, the USDA announced 42 National Institute of Food and Agriculture grants focused on new feedstocks, sustainable production, and biorefinery efficiencies. In May, we complemented that effort with eight research and development projects funded through the Biomass Research and Development Initiative, which supports the production of biofuels, bioenergy, and high-value biobased products from a variety of biomass sources. This research supports the development of improved feedstocks and processes which will improve the efficiency of biofuel production and expand it to all corners of the nation.

Supporting agricultural research. Investments in food, agricultural, and natural resource sciences are catalysts for economic growth and ultimately lead to increased profitability for farmers, reduced food costs and greater choice for consumers, and improved management of the natural-resource base. U.S. public agricultural research and development has accounted for about half of the agricultural productivity growth over the last 50 years. Over that time frame, we have become more reliant on improved agricultural productivity to lead agricultural growth rather than increasing the number of acres under production. Accordingly, in the future we will need to continue investments on public and private sector research and development to feed a

growing population in light of greater environmental constraints, notwithstanding the budget challenges that are real and imminent.

Maintaining a strong safety net for U.S. producers. As we consider the 2012 Farm Bill, it is important to keep in mind that farmers, ranchers, and growers face a variety of risks. Providing an effective safety net is one of the most important ways that we can ensure that America continues farming and ranching.

The most obvious are the risks associated with adverse weather, such as drought, excessive moisture, and high winds. A robust discussion is needed on how to best continue supporting farmers who face these types of disasters and as a result suffer losses to their production and revenue.

Pests and diseases can also lead to unexpected crop and livestock losses and reduced incomes. In addition, the incomes of farmers, ranchers, and growers are subject to swings in prices producers pay for inputs, such as fuel, fertilizer, and equipment and unexpected changes in the prices they received for their crops, livestock, and produce.

Producers have a variety of tools at their disposal to manage these risks. For example, they can manage price, production, and income risk by diversifying production, using seeds that are less prone to drought and insects, adopting precision agriculture techniques, forward pricing, hedging, purchasing insurance, and using off-farm earnings to stabilize farm household income. However, not all of these options are available to all producers. The climate in some areas of the country may severely limit what crops can be grown, off-farm opportunities may not be readily available to some producers, and some risk management tools may not be available for all commodities or regions of the country.

It is important to remember that there are diverse resources available to individual agriculture producers to manage risk. Some producers are highly capitalized while others have limited resources at their disposal to devote to risk reduction strategies. For these reasons, there is not a single risk management strategy that is best for all producers. Rather, individual producers face different risks and need different tools to manage those risks.

Reducing spending and moving in the direction of balancing the Federal budget requires that we be cautious about the level of risk reduction that we provide our farmers, ranchers, and growers. In addition, obscuring or masking the signals of the marketplace through government risk management programs could prove to be counter-productive. We certainly need to continue to help producers manage risk in the future but we must do so in ways that provide effective and wise use of Federal tax dollars and allow markets to function efficiently.

Developing New and Beginning Farmers and Ranchers. Finally, providing support to our new and beginning farmers and ranchers is another important way we can feed our future. The average age of the American farmer is 57, up from 55 in 2002. About 30 percent of principal farm operators are age 65 or older. Mitigating risk so that one bad year does not spell disaster, ensuring access to credit, creating opportunities for information sharing and extension services,

and revitalizing rural communities all helps to make agriculture an attractive option to new and beginning producers.

Conclusion

America's farmers and ranchers produce our food, feed, fiber, and fuel, help preserve our environment, and drive our national economy. Agriculture is responsible for one out of every 12 jobs in America. While many sectors of our economy are running trade deficits, American agriculture has enjoyed a trade surplus for nearly 50 years. This year alone the surplus is expected to exceed $30 billion dollars.

The strength of American producers comes from their willingness to adapt, to embrace science, and to innovate. These farmers and ranchers truly embody the spirit of American ingenuity and are among our nation's greatest assets. As we move to address the challenges and embrace the opportunities that lie ahead, I am confident that our farmers and ranchers will lead the world in quality, efficiency, and innovation. I look forward to working with Congress, Democrats and Republicans, House and Senate, to craft the next Farm Bill to help give our producers the tools that they need to do so.

Madam Chairwoman, that concludes my statement. I would be happy to answer any questions.