Sustainable Food Systems

Overview:

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Agricultural research is crucial for safeguarding both food and national security in the U.S. It delivers transformative innovations that ensure a sustainable and resilient food system across the country that's economically viable, socially just, and environmentally sound. Resiliency requires diversity of production, processing, and distribution scales and locations for supply chains across all agriculture and food sectors. Research is essential for a sustainable and resilient food system to meet the needs of current and future generations.

Outcome Goals and Impacts:

- Achieve national and food security by producing 95% of our food domestically, increasing local and regional farm net incomes by 20%, and reducing food waste by 50%.
- Bolster supply chain resilience of food systems by strengthening local and regional markets to meet between 15% to 25% of the local demand, while reducing the carbon footprint of food transportation by 25%.
- Reduce food insecurity and decrease diet-related diseases by 40%.
- Increase the nutritional value of foods and safeguard food supply through the prevention of foodborne contaminants, plant and animal disease outbreaks, and pests during food production, processing, transportation, and retail.
- ***Cross-cutting outcome:*** Annually train an additional 20,000 students in food, agriculture, and renewable natural resources, addressing the growing demand for a skilled workforce in these sectors. Students will be recruited with diverse backgrounds and experiences reflective of the U.S. population.

Funding Requirement:

To achieve our sustainable food systems goals and address other societal challenges in the U.S., it's critical to allocate an additional $1.9 billion annually in federal research funding to land-grant universities over the next decade. This annual increase is equivalent to just 1% of the total federal research and development budget.

Research Opportunities:

- Identify ways to repurpose agricultural byproducts and extend shelf life to minimize waste and enhance food security.
- Increase access to affordable, nutritious, and safe food, and develop science-based approaches to help individuals adopt healthier lifestyles.
- Conduct cost-benefit analyses, life-cycle analyses, environmental impact evaluations, and social cost-benefit analyses to track improvement of local and regional food system sustainability.
- Develop new surveillance tools and approaches for early detection of pests and diseases across the food chain.
- Develop diverse crops and livestock genetics that increase nutritional value and resistance to diseases and pests, including deploying new biotechnologies, information technologies, and other innovations that take advantage of new and changing environments.

Risk of Not Taking Action:

- Food system failures and disruptions caused by global conflicts, pandemics, economic downturns, geopolitical turmoil, and climate change will significantly threaten national security and lead to increased food supply interruptions, food spoilage and waste, food insecurity and hunger, diet-related chronic and foodborne diseases, environmental degradation, economic instability, and mass migration of people across the globe.