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Date: June 15, 2021

Mr. Bruce Summer  
Administrator, Agricultural Marketing Service  
U.S. Department of Agriculture  
Independence Avenue SW  
Washington, D.C. 20250-0201

RE: Docket number AMS-TM-21-0034 "Supply Chains for the Production of Agricultural Commodities and Food Products." Federal Register notice, April 21, 2021, Vol. 86(75): pages 20652-20654

Submitted online: [www.regulations.gov](http://www.regulations.gov)

The Institute of Food Technologists (IFT) believes that our food and agriculture systems are the cornerstone for the nation's health and security, and we are pleased to see the Administration's and USDA's focus on them, particularly considering the recent supply chain disruptions and challenges experienced due to the COVID-19 pandemic. IFT is a global organization of approximately 12,000 individual members, in 95 countries, who are committed to advancing the science of food. Since 1939, IFT has engaged experts in food science, technology, and related professions from academia, government, and industry to solve many of the world's greatest food challenges. IFT provides scientific, technical, and career development resources for advancing the science of food and its application across the global food and agricultural systems. We believe that science is essential to ensuring that our global food system is sustainable, safe, nutritious, and accessible to all. IFT appreciates the opportunity to comment. Specifically, IFT's comments are responsive to the following:

"(ii) other essential goods and materials underlying agricultural and food product supply chains, including digital products, and infrastructure. Under section 6(d) of E.O. 14017, "other essential goods and materials" means those that are essential to national and economic security, emergency preparedness, or to advance the policy set forth in section 1 of E.O. 14017, but not included within the definition of "critical goods and materials." USDA also will consider "other essential goods and materials" **relative to nutrition security given its related importance to national and economic security**. USDA is particularly interested in comments on the following goods and materials pertaining to agricultural and food supply chain resilience including, but not limited to: Seed, fertilizer, pesticides, livestock/animal health, feed and feed additives, plant health, soil health, water (availability, quality, access, infrastructure), energy (availability, access, infrastructure), viability of pollinators, the agricultural workforce (sufficiency, reliability, documentation, health and well-being), access to capital/financing, access to farm production tools (including for farmers interested in value-added agriculture such as USDA organic certification), **access to critical food distribution assets (shipping containers, cold chain equipment, and materials such as packaging) and technology, access to food**

**processing and markets (including traceability and transparency), and access to training, education, and technical assistance;”**

To improve and ensure food and nutrition security for the U.S. population, particularly for the most vulnerable, resiliency and agility of the food supply chain is critical, especially during national emergencies, such as the COVID-19 pandemic. For the food supply chain to be more resilient and agile, there is a need to improve/advance many components of the supply chain and investment in research in many areas is needed. The areas mentioned below that need attention are examples and not a comprehensive list.

1. Improve/build food system infrastructure to:
  - a. Provide more flexible production and packaging systems that enable the transfer of food products between food service and retail.
  - b. Enhance regional storage and distribution networks, especially for healthy perishable food products with shorter shelf-life and need special storage conditions.
  - c. Incentivize food manufacturers and transporters to invest in increasing manufacturing capacity and distribution, in case of a national emergency.
  - d. Develop regional mechanisms to accept and process perishable food products, as a contingency, in case of emergencies, such as shut down of manufacturing or processing facility(s).
  - e. Develop and incentivize mechanisms for increasing supply chain visibility and coordination for essential food supply chains.
  - f. Develop and leverage traceability and artificial intelligence (AI) tools to enhance rapid response to supply chain disruptions at regional and national levels.
  - g. Assess known and likely supply chain bottlenecks (e.g., ports, transportation lanes, and concentrated manufacturing operations) and incentivize capacity and/or diversification investments to mitigate.
  
2. Invest in research to:
  - a. Provide more options of safe, affordable, accessible, and convenient food products across all food groups, that fit into a health dietary pattern and meet consumer preferences.
  - b. Accelerate new research on food safety, particularly during transportation.
  - c. Increase shelf-life of nutrient-dense foods that fit into a health dietary pattern and meet consumer needs and preferences.
  - d. Develop and apply new technologies to reduce food loss and waste across the food supply chain.
  - e. Advance our understanding about the association between food and nutrition and diet-related chronic diseases.
  - f. Develop new low/no cost digital data collection technologies to improve supply chain traceability and transparency.
  
3. Develop:
  - a. Educational tools and resources to help consumers prepare healthy foods/meals that can fit into a healthy dietary pattern.

- b. Education tools for in-classroom teaching about the food supply chain and preparing healthy foods/meals that can fit into a healthy dietary pattern.
- c. Education/training resources for influencers about how all forms (fresh, frozen, canned, and dried) and particularly shelf-stable processed forms (dried, frozen, canned) of foods can be part of a healthy dietary pattern, especially during emergency situations when fresh options may be limited.
- d. Educational tools to mitigate consumer “pantry stocking” behaviors during early crisis phases.
- e. Training and educational resources on safety and other aspects of food production for food and agriculture work force to maintain food supply, especially during crisis.

Innovation is key to creating a sustainable food system(s). A global population of over nine billion people by 2050 will demand a staggering increase in the world’s food supply. Additionally, climate change, natural and man-made disasters, and other unforeseen circumstances, such as the pandemic, could cause major disruptions in the food supply chain. Increased public investments for research, education, and training in food and agriculture (AgriFood), particularly in the post-harvest segment of the food supply chain is needed to build a food system that can withstand such challenges and disruptions.

According to IFT’s 2020 white paper, the AgriFood sector is the third-largest contributor of direct U.S. GDP, after healthcare and housing, accounting for \$5.08 trillion of combined GDP and 22.8 million jobs in 2018. Further, the Food sector (processing, manufacturing, distribution, retail, food service, and delivery of food and beverage products) within AgriFood contributed \$2.7 trillion of combined GDP and accounted for 20.7 million jobs in 2018. Yet, for more than 20 years, Federal funding, largely through USDA, for food and agricultural sciences, economics, education, and extension has been flat, while there has been a rapid increase in AgriFood research by other countries (e.g., China, India, and Brazil). Along the spectrum of the food supply chain, AgriFood research has increasingly focused upstream (i.e., agriculture) and downstream (i.e., consumption), with very little emphasis on the middle segment (e.g., formulation, processing and packaging, and retail).<sup>1</sup> According to a recent National Academies of Sciences Engineering and Medicine report, the Federal share of research funding for food science, including food processing, preservation, and other food-related technologies, declined from 10% to 4% of the total funding for nutrition related research between 1985–2009.<sup>2</sup> Additionally, the complexity of the U.S. food supply chain requires new tools to ensure resiliency in the case of a national emergency. Large amounts of data are being collected throughout the food system that could be used to improve food safety, reduce food loss and waste across the food supply chain, enhance nutritional quality for food products increase process efficiencies, improve retail and food service inventory management, and increase consumer’s awareness about food and nutrition, for example.

The association between food, nutrition, and diet-related chronic diseases and their mounting healthcare costs, evolving disparities in diets, varying consumer demands, food safety challenges, inequalities, increasing susceptibility to unforeseen threats to the food system, including COVID-19 and impacts of climate change have heightened the need for resilient and agile food systems. We believe that significant investments in food and agriculture with an urgent focus in Food research (e.g., food safety and quality, processing, formulation, manufacturing, distribution, retail, food service, and delivery

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<sup>1</sup> Mohamedshah, F., Havlik, S., & Velissariou, M. (2020). *Food research: Call to action on funding and priorities* [White paper]. Institute of Food Technologists. <https://www.ift.org/-/media/policy-advocacy/ift-whitepaper-012720final.pdf?la=en&hash=325D75E4611DD73335C9ED2DD3C8A7143D589F78>

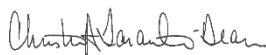
<sup>2</sup> National Academies of Sciences Engineering and Medicine. (2019). *Science breakthroughs 2030: A strategy for food and agricultural research*. <http://nas-sites.org/dels/studies/agricultural-science-breakthroughs/>

of food and beverage products) will help address challenges and transform our current system to a more resilient and agile food system that provides safe, nutritious, affordable, accessible, sustainable, palatable, and consumer acceptable food products, to help achieve long-term food and nutrition security and improve public health<sup>3</sup>, even at times of national emergency.

If research investments in the science of food, food processing, preservation, human nutrition, and other transdisciplinary sciences, along with enhancement of the supply chain infrastructure and supply management tools do not increase, we risk much greater impacts on the food supply chain, than experienced during COVID-19. Additionally, we risk losing a significant portion of the national GDP, our global competitiveness, and the next generation of scientists and talent pipeline in AgriFood sector.

The health of the population is linked to economic health and security of the country. We believe that the science of food and application of advanced technologies (e.g., AI, IoT sensors, Whole Genome Sequencing, biotechnology, virtual reality, machine learning, and block chain) are critical in transforming our current food system to a more resilient and agile, that can meet the increasing food and nutrition demands nationally and globally. We trust that the Administration and USDA will increase investments in research for food and agriculture, with a focus on Food. Please contact John Ruff, Chief Science and Technology Officer ([jruff@ift.org](mailto:jruff@ift.org); 312-782-8424) or Farida Mohamedshah, Director, Nutrition Science, Food Laws and Regulations, ([fmohamedshah@ift.org](mailto:fmohamedshah@ift.org); 202-739-1432), if IFT may provide further assistance.

Sincerely,



Christie Tarantino-Dean, FASAE, CAE  
IFT, Chief Executive Officer

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<sup>3</sup> Mohamedshah, F., Havlik, S., & Velissariou, M. (2020). *Food research: Call to action on funding and priorities* [White paper]. Institute of Food Technologists. <https://www.ift.org/-/media/policy-advocacy/ift-whitepaper-012720final.pdf?la=en&hash=325D75E4611DD73335C9ED2DD3C8A7143D589F78>