

Food Waste and The Environment

Award Year:

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Principal Investigator:

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Associated Program:

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According to the Food and Agriculture Organization of the United Nations (FAO), about one-third of the food produced worldwide is lost or wasted at some point in the food supply chain during production, processing, distribution, preparation, and consumption. When food is wasted, the land, water, energy, and other resources used in the production and distribution of the food impacts the environment. Furthermore, greenhouse gas emissions occur from the food production and distribution process, transporting food waste, and decomposition of food waste in landfills. As the global population increases, pressure to reduce food waste will increase to ensure adequate food supplies given available resources without further impacting the environment. Several U.S. and international efforts are underway to reduce food waste and increase the sustainability of the food system.

Prior studies have measured the environmental impacts of the food system in general, of food waste specifically, or of changes in food consumption patterns based on the dietary guidelines or other trends. The types of environmental impacts studied include use of land, water, nitrogen, fossil fuels, and energy, and emissions of greenhouse gases. Approaches used include life cycle assessment, input-output analysis, and other types of modeling or accounting approaches. This project will contribute to the existing body of knowledge by defining types of impacts, assessing measurement methods, and identifying data sources with a focus on how best to prioritize food waste reduction efforts in the United States. The overall objective is to define and measure the ecological and environmental impacts of food loss and waste across regions within the U.S. food system taking into consideration all sources of impacts from input sourcing in agricultural production through landfill disposal of waste across types of foods. The intent is to provide actionable results that can help target cost-effective food waste reduction efforts under public and private initiatives.

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