

Examining Food Loss and Food Waste in the United States

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Food that is lost before it reaches the consumer, and food that is wasted by consumers, has been estimated to account for as much as 40% of the total food produced in the United States (Buzby, Wells, and Hyman, 2014; Hall et al., 2009). This represents losses of important resources—including water, chemical inputs, and labor—as well as unused nutrients for consumers. Stakeholders along the supply chain are increasingly interested in developing improved approaches to measuring food waste, understanding its determinants, and devising strategies to ultimately reduce it.

To date, a majority of food waste studies have focused on household-level waste; fewer studies have examined waste in food distribution and retail settings, and very little work has been conducted to understand the economic causes and consequences of food loss at the farm level. This *Choices* theme presents a collection of articles that explore food loss and food waste in the context of the U.S. food supply chain. The behavior and incentives of a variety of food system stakeholders including producers, market intermediaries (including retailers), and consumers are considered. The articles are organized along the supply chain, beginning with upstream issues of food loss proceeding through downstream topics such as household decisions concerning when to discard food. Taken together, this collection offers intriguing insights into current frontiers of the myriad private and public efforts to better characterize, quantify, and reduce food waste.

The contribution by Dunning, Johnson, and Boys provides a novel framework for assessing the value of food lost on farms. They focus on six vegetables grown in North Carolina and use farm-level data to estimate the potential profits associated with additional harvests of marketable and edible crop that would ultimately reduce field-level food loss. Their results indicate that, under some conditions, additional harvests and subsequent sales would lead to modest yet nontrivial increases in per acre profits (notably for cucumbers and sweet potatoes). The framework developed here allows us to better understand the economic tradeoffs associated with reducing food loss in the fields and nudges us toward thinking more carefully about potential markets for foods, notably vegetables, which currently are not harvested.

Capps Jr., Ishdorj, Murano, Field, Hutto, and Storey describe a pilot study examining the nature of vegetable plate waste in two elementary school districts in Texas during the 2012–2013 academic year. Results from this work showcase the level of waste of vegetables in this setting: Plate waste for all vegetables and all subgroups of vegetables exceeded 35%, and in many cases was greater than 60%. Waste levels across vegetable subgroups varied widely, with the least waste associated with potatoes and beans and the most waste with dark green and red-orange vegetables. This work provides additional evidence that not all food is wasted in the same amount and has implications for generic efforts that attempt to decrease total plate waste.

Bolos, Lagerkvist, and Nayga Jr. consider the impact of visual appearance, information effects, and goals in consumer food choices. The implications of these literature-based observations are then used to consider purchase decisions of cosmetically imperfect produce in retail settings. Examples of retailer initiatives to reduce food waste drawn from both the United States and Europe are highlighted. The authors suggest that future

research into cognitive and behavioral nudges concerning the consumption of cosmetically imperfect produce may yield concrete actions that retailers could implement to encourage consumers to purchase these products.

Grant, Gallardo, and McCluskey shed new light on how consumers may adjust food waste patterns in the presence of innovations designed to replace or complement other package information about food quality and food safety. This work develops a choice experiment with options involving raw ingredients and ready-to-eat meals as a way to evaluate one dimension of consumers' willingness to pay for reduced food waste. The authors find evidence that consumers are willing to pay more for initiatives that increase food shelf life which may lead to a reduction in food waste. This work offers insights into consumer acceptance of new technologies that might provide better information about the freshness and quality of food and has implications for the generation of food waste in household settings.

Wilson, Miao, and Weis tackle the issue of consumer confusion regarding packaged food date labels. With no standards or regulatory requirements in place, food processors currently use a variety of terms to indicate a suggested date by which a food should be consumed. Consumers, however, are often confused as how to interpret these labels and frequently infer incorrect information about a product's quality and/or safety. This study examines consumer response to an industry-led recommendation to use a simplified "use by" date for food safety and a "best if used by" date label to reflect product quality. These authors find that, even with the proposed labels, consumers' willingness to consume (or discard) products that are past the posted date on the label varies by type of product. These findings indicate that the proposed date labelling approach is unlikely (at least in the short run, when consumers are not yet educated about the meaning of these labels) to generate widespread decreases in unnecessarily wasted food.

In the final article, Minor, Hitaj, Kuchler, Raszap Skorbiansky, Roe, and Thornsbury draw upon a workshop hosted by the U.S. Department of Agriculture Economic Research Service to introduce and review current U.S. discussions concerning the concepts of food loss and food waste, and constraints to addressing it. The authors offer a discussion of the concepts of "food waste" and "food loss," which are sometimes used interchangeably, and explore competing definitions of both terms. Explicit in this discussion is the recognition that how one defines food loss (or food waste) has implications for the magnitude and scope of the issue. It is acknowledged that while generating food loss would never be an intended outcome, agri-food business efforts to manage their risk can contribute to it. The importance of a nuanced understanding of the supply chain characteristics and market opportunities for a given type of produce are recognized as needed in developing strategies to address food loss. This work offers insight concerning some of the tradeoffs that must be considered in developing food loss reduction strategies.

For More Information

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