

Addressing Food Waste as a Social Issue:
Cultural Roots and the Importance of a Multifaceted Approach

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Food waste in America amounts to approximately 133 billion pounds of food each year, with loss deriving from every level of the production and consumption chain. Meanwhile, 41.2 million Americans live in food insecure households. Food waste is a detrimental environmental and economic issue. However, food waste is also a *social* issue. With the rise of an industrialized food system, a culture of abundance and waste dominates the privileged American culture. Wendell Berry helps to understand the roots of this wasteful culture. Those who experience food insecurity are left without access to abundance of healthy, nutrient-rich foods. In the long run, a cultural shift is necessary to attack the roots of a wasteful culture. However, in the short run, initiatives to address food waste specifically as a social issue are necessary to mitigate the issue and work towards the long run goal.¹ Some initiatives already take place at the federal *and* local levels. Both demonstrate success in *different* ways; the federal initiatives make room, make widespread, and incentivize initiatives. Small scale initiatives tailor their initiatives to specific communities. Because of the complexity of the dual issue, these initiatives are most efficient when present as a holistic, multi-level approach to tackling food waste.

Describing Food Waste in America

According to Purabi Ghosh in “An Overview of Food Loss and Waste: Why Does it Matter,” the term food waste means “food fit for human consumption that is discarded and not eaten in the food value chain.” The food value chain is a comprehensive chain of the processes that carries food from the farm to the consumer. It includes: raw material, supply industries, packaging, production, harvest, storage, wholesale, processing, distribution, retail, shopping, storage, and consumption.² This food waste is a subset of “food loss,” which is “food produced or being produced for human consumption” that is not or cannot be consumed by humans.”³

While this definition works as the meaning of food waste for the project, there is no standard definition for food waste. Contrasting definitions can be seen between the United States Department of Agriculture (USDA), the Food and Agriculture Organization of the United Nations (FAO), and the European Union. USDA’s definition aligns with Gosh: “Food waste is a subcomponent of food loss, and examples include edible food discarded by retailers due to color

¹ This does not eliminate the necessity of initiatives that also address the economic and environmental aspects specifically. This paper simply focusses on the *social* nature of the issue of food waste.

² Purabi Ghosh, et al, “AN OVERVIEW OF FOOD LOSS AND WASTE: WHY DOES IT MATTER?” *Cosmos* 11, no. (December 2015): 89-103, Academic Search Complete, EBSCOhost Ghosh, “AN OVERVIEW OF FOOD LOSS AND WASTE: WHY DOES IT MATTER?” 91.

³ Ghosh, “AN OVERVIEW OF FOOD LOSS AND WASTE: WHY DOES IT MATTER?” 90.

or appearance and plate waste thrown away by consumers.”⁴ Food waste, according to the USDA, only includes waste that could have been avoided. FAO describes *food loss* as edible food wasted during production and *food waste* as edible food that is wasted on the retail and consumer level.⁵ This definition is narrower than that of the USDA, limiting the levels of the value chain that are considered. The European Union, as of 2008 when they first established a category of “food waste” within a broader category of waste, defines food waste as “any food substance, *raw or uncooked*, which is discarded or intended or required to be discarded.”⁶ This definition, which only includes raw or uncooked foods, drastically limits the scope of food waste in comparison to FAO’s definition and especially in comparison to the USDA’s definition. The USDA, FAO, and the EU are three powerhouses when it comes to food and food policy. However, while working together, their definitions do not match up. This lack of standard definition trickles down to smaller state-wide programs and private organizations.

This lack of a cohesive definition is problematic. First, how do we know what is actually being measured? If the definitions for food waste vary, what is measured also varies. Some definitions include food that goes into animal feed, some do not. Some definitions consider food that is composted, some do not. Some measure using weight, some measure by calorie or kcal.⁷ Some definitions even consider over-consumption (“the gap between the energy value of *consumed food* per capita and the energy value of *food needed* per capita”).⁸ Information from every aspect of the value chain is crucial in gathering the best measurement, so a standard definition is also crucial. Second, less cohesive understanding can lead to less cohesive action. In her article “Whose ‘everyday mundane’? The influence of class and privilege in the creation of food waste,” T. Suma argues, “A more uniform global definition would enable more accurate comparative work.”⁹ Initiating a way to reduce food waste is difficult when what is considered

⁴ Jean Buzby, Hodan Wells, and Jaspreet Allah, “Food Loss—Questions About the Amount and Causes Still Remain,” *USDA ERS*, February 2014, accessed March 23, 2018, <https://www.ers.usda.gov/amber-waves/2014/june/food-loss-questions-about-the-amount-and-causes-still-remain/>; Food loss is defined as “the amount of food available for human consumption—after removing bones, pits, peels, and other nonedible parts—that is not consumed for any reason. It includes moisture loss and cooking shrinkage; loss from mold, pests, or inadequate climate control; and food waste.”

⁵ T. Suma, “Whose ‘everyday mundane’? The influence of class and privilege in the creation of food waste,” in *Envisioning a future without food waste and food poverty: Societal challenges*, ed. [Leire Escajedo San-Epifanio](#) and [Mertxe De Renobales Scheifler](#) (The Netherlands: Wageningen Academic Publishers, 2015), 56.

⁶ T. Suma, “Whose ‘everyday mundane’?” 56.

⁷ Barbara Ekwall, “Global Food Loss and Food Waste and the Environmental Footprint” in *Food Waste Across the Supply Chain: A US Perspective on a Global Problem*, ed. Zhengxia Dou, James D. Ferguson, David T. Galligan, Alan Kelly, Steven Finn, and Robert Galligan (Ames, Iowa: CAST, University of Pennsylvania, 2016), 13.

⁸ J. Parfitt, M. Barthel, and S. Macnaughton, “Food Waste within Food Supply Chains: Quantification and Potential for Change to 2050,” *Philosophical Transactions of the Royal Society B: Biological Sciences* 365, no. 1554 (2010): JStor, 3065.

⁹ T. Suma, “Whose ‘everyday mundane’?” 56.

food waste is flexible.

Implications with the term food “*waste*” arise, especially considering a project that argues for a reallocation of this food to those who are food insecure. The word waste carries connotations of unwanted or unusable. The goal is to reduce food waste. While these connotations might not have a big impact when it comes to limiting the amount of waste that is created, the connotations effect rescuing food that is going to be “wasted.” Nobody wants to eat food that somebody else has considered unusable. Many individuals who receive this food “waste” after reallocated often suffer from poverty and consequential low sense of self-esteem. Handing out “waste” for these suffering individuals to eat could further demean their sense of self.

In addition to the difficulty in defining food waste, there is a huge difficulty in measuring food waste. In the United States, data on food waste is gathered via “structured interviews, measurement of plate waste, direct examination of garbage and application of inferential methods using waste factors measured in sample populations and applied across the food system.”¹⁰ While this list is extensive, it is impossible to cover every facet of food waste in the country. Food waste at the consumer level is especially difficult to measure. In consumer studies, participants tend to be “reactive,” changing their behavior when they know they are being measured. In estimating their own waste, consumers tend to underreport waste. Plate waste studies in schools are structured and uniform, but they are only able to target a small segment of the population—school children at lunchtime. Consequently, the results from these studies cannot be extrapolated to other broader demographics.¹¹ Landfill studies also do not fully represent food waste. It is difficult so separate food waste from other forms of waste, and waste that has been composted or down the disposal is rarely accounted.¹² Because of the difficulty in measuring, all data detailing food waste must not be taken to precisely. Likely, the numbers are larger than we know.

Because food waste is difficult to measure, is defined in so many different ways, and is measured in so many different ways, we have very little studies that align with each other. Reliable longitudinal studies are especially lacking because of the fluid definitions and measures.

¹⁰ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," *Journal of Consumer Affairs*, September 14, 2011, <http://onlinelibrary.wiley.com/doi/10.1111/j.1745-6606.2011.01214.x/abstract>, 500.

¹¹ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 500.

¹² Ibid.

According to the NRDC, the most comprehensive report on food loss in the United States was issued by the USDA in 1997.¹³ However, it only includes information on retailers and consumers. In the report, the USDA calls for more data. Almost 21 years later, not much more detailed information is available on such a large scale. The USDA has continued to update the estimates and added information on supermarket and consumer losses. However, according to the NRDC, a comprehensive study of food loss across the supply chain is “still lacking.”¹⁴

While food waste is difficult to measure, and there does not seem to be one, sweeping updated study of food waste in the United States, several organizations and governmental programs have made the attempt to account for and break down recent food waste in the United States. According to the Pulitzer Center, in 2013, 133 billion pounds of food worth \$161 billion was lost across the U.S., making America the world's largest producer of food waste.¹⁵ This statistic covers a broad category. In order to appropriately address food waste, it is important to break down where the waste is occurring.

In “Food waste within food supply chains: quantification and potential for change to 2050,” Julian Parfitt, Mark Barthel and Sarah Macnaughton extensively break down the waste according to the food value chain. Their eleven categories include harvesting, threshing, drying/transport/distribution, storage, primary processing (cleaning /pounding/ grinding/ packaging/ milling, etc), secondary processing (mixing, cooking, frying, molding, cutting, extrusion), product evaluation, packaging (weighing, labelling, sealing), marketing (publicity, selling, distribution), post-consumer (recipes elaboration, new dish product evaluation, consumer education, discards), and end of life (disposal of food waste at different stages of supply chain).¹⁶ This extensive categorization holistically demonstrates places waste potential occur along the value chain.

For the purpose of this paper, I will use three broader categories, adopted from Jean Buzby, Jeffrey Hyman, Hayden Stewart, and Hodan Wells’ work “The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States.” These three categories are farm level

¹³ Dana Gunders, "Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill," *National Resources Defense Council*, August 2012, <https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>.

¹⁴ Dana Gunders, "Wasted."

¹⁵ Molly Blankenship, "Culture of Waste: The Gap Between Food Waste and Food Insecurity," *Pulitzer Center*, September 18, 2017, accessed March 24, 2018, <http://pulitzercenter.org/builder/lesson/culture-waste-gap-between-food-waste-and-food-insecurity-18469#slideshow-2>.

¹⁶ J. Parfitt, et al, "Food Waste within Food Supply Chains," 3066.

food loses, processing and retail level losses, and consumer level losses.¹⁷ While the categories are derived from Buzby's work, the statistics are taken and adapted from the NRDC's food waste study.

Of the three broad categories, farms produce the second largest amount of waste. First, often farmers do not even attempt to harvest all of their crops. If the crops do not look perfect enough for the demand standard, the farms, especially the large industrial farms, will leave the crops in the field.¹⁸ Then, crops can become more prone to disease and spoilage during storage and transport if they had been exposed to unseasonable freezing, hail, disease, mold, or pests. Once harvested, crops may also be rejected due to failure to meet retail quality standards.¹⁹ The market may also effect farm loss. If the profits from the produce will not cover the costs of shipping and handling, the farmer may leave some in the field. If demand is exceptionally high, the farmers might intentionally overproduce out of weather-loss anticipation. Labor shortages lead to produce loss-- if there are not enough workers in the field to pick before the food is lost, the produce is left in the field.²⁰

While statistics across the country are variable, the NRDC suggests that approximately 7% of planted fields are not harvested each year. This number could be upwards of 50% for certain crops or rotations. According to the same study, about 97,000 acres of fruits and vegetables were not harvested in 2012.²¹ These statistics do not even cover the food that is wasted *after* being harvested. Naturally, these post-harvest losses vary farm to farm. However, the NRDC shares some anecdotes that shows how extensive the post-harvest losses can be: "One large cucumber farmer estimated that fewer than half the vegetables he grows actually leave his farm and that 75 percent of the cucumbers culled before sale are edible. A large tomato-packing house reported that in mid-season it can fill a dump truck with 22,000 pounds of discarded tomatoes every 40 minutes."²²

In their 2008 study, Buzby, Hyman, Stewart, and Wells looked into the types of food wasted on farms. This study is largely outdated; however, it is helpful in understanding where the loss is occurring. In one year, 59,000 pounds of grains, 61,832 million pounds of fruit,

¹⁷ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 496.

¹⁸ Further research could uncover the difference between leftover crops on small, local farms and large, industrial farms. Gleaning operations can help with this process. And, the Ugly Fruit Campaign is working against this demand for perfection.

¹⁹ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 496.

²⁰ Dana Gunders, "Wasted," 7.

²¹ Dana Gunders, "Wasted," 8.

²² Dana Gunders, "Wasted," 8.

82,463 million pounds of vegetables, and 3,175 million pounds of tree nuts were lost. While not on the “farm” specific level, 83,455 million pounds of dairy products, and 59,861 pounds of meat/poultry/fish were lost in the production segment of the value chain. This loss is extensive.

The NRDC breaks statistics into percentages from a 2012 study on the United States, Canada, Australia and New Zealand. During production, 2% of grain products, 11% of seafood, 20% of fruits and vegetables, 3% meat, and 3% of milk were lost. During postharvest, handling, and storage loss, 2% of grain products loss occurred, .5% of seafood loss, 3% of fruits and vegetables loss, 2% of meat loss, and .5% of milk loss occurred.

The next stage of the value chain is the retail level. Of the three categories, the retail level contributes the smallest amount of waste. Overstocked product displays leads to damaged fruit from the weight of the pile. Consumers expectation for aesthetic perfection compels retailers to often only display their “perfect” produce even if other produce is perfectly good to eat. Produce often comes in preset packages that are larger than the retailer needs, leaving the retailer with excess food that is often wasted. Recent trends towards “fresh, ready-made food until closing” have left stores with huge amounts prepared, perishable food at the end of each day that they do not want to use the following day. “Sell-by,” “use by,” and “expired” dates, which are mostly not even legally regulated, lead to confusion. Retailers do not want consumers to think they are selling them food that is not fresh, so they toss the food before it even reaches the date, even if it is still good to eat. An expert estimates that supermarkets on average discard \$2,300 per store worth of out-of-date food every day. Restaurants’ large portions, pressure to maintain ingredients for excessive menu offerings, kitchen culture, and plate waste contribute largely to retail level loss. Caterers always produce significantly more food than needed. Damaged food leads to waste on the retail level. Lastly, understaffing leads to less avenues for food to be recovered before it is wasted. It is convenient to just toss away the excess.²³

Other smaller-scale retail norms contribute to retail-level loss. When the product reaches the retailer, the retailer often has to trim away inedible *and* edible portions of foods such as meat.²⁴ In some cases, temperature abuse leads to “faster deterioration and increased potential for microbial growth.”²⁵ The recent trend towards pre-cut produce and ready-to eat-food leads to

²³ Dana Gunders, “Wasted,” 10-1.

²⁴ Dana Gunders, “Wasted,” 9.

²⁵ Dana Gunders, “Wasted,” 9.

more waste at the retail level.²⁶ Some retailers may discard food for marketing-based reasons: overstocking, improper stock rotation, products not up to specification. Often, when a new food is first introduced to the market, it fails, and all its remanence are thrown away. For example, in 2005, the failure rate for new foods was about 90%.²⁷

According to the NRDC, in-store food losses in the United States totaled an estimated 43 billion pounds in 2008, which is equivalent to 10 percent of the total retail food supply. One recent industry consultant estimates that up to one in seven truckloads of perishable food delivered to supermarkets is thrown away before it reaches the consumer. The USDA estimates that the *retail* losses alone total approximately \$15 billion annually in unsold fruits and vegetables alone.

According to the same 2012 study referenced in the farms section, at the distribution and retail level, 2% of overall grain products are lost, 9.5% of seafood, 12% of fruits and vegetables, 4% of meat, and 2.5% of meat.²⁸ Again, Buzby's 2008 shows this loss in poundage. At the retail level, 7,171 million pounds of grains, 5,742 million pounds of fruit, 6,886 million pounds of vegetables, 9,360 million pounds of dairy, 2,724 million pounds of meat/dairy/poultry, and 3,715 million pounds of tree nuts and peanuts were lost.²⁹

Most losses occur at the consumer level. The NRDC articulates some main drivers in the loss at the consumer level. Consumers increasingly have a lack of awareness and undervaluing of food. Low prices and high availability lead consumers not to think much about waste, even if they consider themselves "eco-friendly" people. Date-labeling, such as use-by, sell-by, expired, and consume-by, lead to confusions. Consumers do not want to take the risk on eating unsafe food, even though much of the food is very edible past sell-by/use-by dates which are not legally regulated. Poor storage, low refrigerator visibility, partially used ingredients, and misjudged food needs lead to spoilage in the household. Bulk purchases, poor planning, and over-preparation lead to waste for the consumer also.³⁰ A widespread and growing intolerance of substandard food (such as undersized or lack of aesthetic) has likely increased the food waste on both the home consumers and restaurants. Also, the increasing emphasis on coupons, discount offers and supersized portions and on meals at retail stores, restaurants and other dining-out venues has

²⁶ But, it decreases some loss at the consumer level and helps salvage some unaesthetic produce that would otherwise not be sold.

²⁷ Dana Gunders, "Wasted," 9.

²⁸ Dana Gunders, "Wasted," 4.

²⁹ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 499.

³⁰ Dana Gunders, "Wasted," 12-13.

increased the expectations of consumer size, leading to a greater potential for food waste.³¹

According to the NRDC's report, American households throw away about 25% of their food and beverages that they purchase. For a family of four, this monetarily amounts to wasting \$1,365 to \$2,275 annually.³² According to the same 2012 study referenced in the farms section, at the distribution and retail level, 27% of overall grain products are lost, 33% of seafood, 28% of fruits and vegetables, 12% of meat, and 17% of milk is lost at this level.³³ Buzby's 2008 study shows this loss in poundage. At the consumer level, 10,517 million pounds of grains, 9,040 million pounds of fruit, 16,483 million pounds of vegetables, 14,025 million pounds of dairy, 20,370 million pounds of meat/dairy/poultry, and 3,715 million pounds of tree nuts and peanuts were lost.³⁴

Much of this food waste could be controlled, but some food loss is inherently uncontrollable due to its perishable nature. Discarding waste such as moldy fruit or diseased meats are necessary to ensure the "wholesomeness" of the U.S. food supply. Restaurant food liability also unfortunately results in reasonable food loss.³⁵ For most studies, these food "losses" are not counted as waste. However, they may be included in some of the above studies.

As described above, the scope of food waste in the United States is massive across all levels of the food value chain. Naturally, the consequences of loss are equally as substantial. Food waste's effects loosely fall into three categories of consequences: environmental, economic, and social. Here, I will briefly elaborate on the environmental and economic consequences. My subsequent sections argue that food waste is a social issue that should be considered in relation to the food insecurity present in the United States.

Food waste is detrimental to the environment. 21% of municipal waste in landfills is food waste.³⁶ This is the single largest component in the landfills. In these landfills, because the food waste is buried and lacks exposure to oxygen, anaerobic decompositions leads to the production of methane gas.³⁷ Consequently, food waste is the third largest source of methane in the United

³¹ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 497.

³² Dana Gunders, "Wasted."

³³ Dana Gunders, "Wasted," 4.

³⁴ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 499.

³⁵ Jean C. Buzby et al., "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," 497.

³⁶ "Food Summit Opening 1-HD," *Vimeo*, March 10, 2018, Accessed March 25, 2018, <https://vimeo.com/148548849>.

³⁷ "Composting Gases vs Landfill Methane Gas: Does It Really Make a Difference? WIH Resource Group," *WIH Resource Group, Inc*, December 26, 2009, <https://wihresourcegroup.wordpress.com/2009/12/26/composting-gases-vs-landfill-methane-gas-does-it-really-make-a-difference-wih-resource-group/>; Compost is substantially better than landfills. In composts, the waste undergoes aerobic decomposition, which allows for exposure to oxygen. The process produces CO₂ (carbon dioxide) rather than of methane.

States.³⁸ Additionally, in the production of food, water, gasoline, energy, labor, pesticides, land, and fertilizers are heavily used. When the food is thrown away, these resources used to produce the food are wasted.³⁹

The economic consequences of food waste are also substantial. First, the food that is wasted amounts to approximately \$160 billion annually. This estimate is taken assuming that each pound of food wasted is worth approximately \$1.⁴⁰ This amount is larger than the GDP of Hungary, New Zealand, or Peru.⁴¹ The money saved could go back into the pockets of farmers, processor, retailers, restaurants, and consumers. While food waste and consequently the money loss will never measure to zero, the numbers could be substantially reduced. Food waste can be seen as a waste of taxpayer money. In 1977, the General Accounting Office reported that \$267.5 millions of federal funds were used towards efforts against plate waste. Using their formula, Bloom calculates that the 2012 federal number would be approximately \$1.4 billion.⁴² If food waste is reduced, this segment of governmental spending would be substantially reduced, too.

The environmental and economic impacts of food waste are drastic and alone enough to motivate producers and consumers to rethink the way they approach food and food waste.⁴³ However, in a later section, I articulate that food waste is also a social issue. Massive amounts of waste exist in the midst of pervasive food insecurity. Before immediately fixing food waste as a social issue, I describe food insecurity in the United States in an effort to contextualize the situation.

Describing Food Insecurity in the United States:

According to the United States Department of Agriculture, food security means “access by all people at all times to enough food for an active, healthy life.”⁴⁴ A household that is “food insecure” is a household in either low or very low food security that “has had difficulty at some

³⁸ "USDA | OCE | U.S. Food Waste Challenge | FAQ's," *United States Department of Agriculture*, 2017, <https://www.usda.gov/oce/foodwaste/faqs.htm>.

³⁹ "Sustainable Management of Food Basics," *EPA*, July 06, 2017, <https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics#what>.

⁴⁰ Jonathan M. Bloom, *American Wasteland: How America Throws Away Nearly Half of Its Food (and What We Can Do about It)* (Cambridge: Da Capo Press, 2011), 27.

⁴¹ Jonathan M. Bloom, *American Wasteland*, 27.

⁴² Jonathan M. Bloom, *American Wasteland*, 27-28.

⁴³ "An Economic Analysis of Food Waste Solutions." *ReFED | Rethink Food Waste*, 2018, www.refed.com/analysis?sort=economic-value-per-ton.

⁴⁴ Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh, Alisha, "Household Food Security in the United States in 2016," *USDA Economic Research Service*, September 2017.

time during the year providing enough food for all their members due to a lack of resources.”⁴⁵ In a low food security household, household members “obtained enough food to avoid substantially disrupting their eating patterns or reducing food intake by using a variety of coping strategies, such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries.”⁴⁶ In “very low food security” households, household members report “*multiple* indications of disrupted eating patterns and reduced food intake.”⁴⁷ According to the USDA’s report summary “Household Food Security in the United States in 2016,” 12.3 percent of households, or 15.6 million people, in the United States were food insecure in 2016. To further break this number down, 7.4 percent of households (9.4 million) experienced low food security, while 4.9 percent (6.1 million) experienced very low food security. The overall number is relatively the same as 2015 (12.7 percent) but represents a downward trend since 2011’s 14.9 percent. However, the rate remains above 2007’s pre-recession level of 11.1 percent.⁴⁸

The numbers alone are upsetting. However, the quality of the food further complicates food insecurity. Even when these low income and very low income families have food to eat, the quality of food is not always acceptable. Low-income Americans are more likely to have unhealthy diets that lack an appropriate amount of fruit and vegetables.⁴⁹ This lack of access to healthy foods are detrimental to the already unstable health outcomes of low income families. Long term, low fruit and vegetable consumption is correlated with increased risk of cardiovascular disease, stroke, obesity, and certain cancers.

In addition to potential long-term consequences, food insecurity effects the day to day functioning of individuals. Hunger and malnutrition can lead to poor physical and cognitive development, resulting in low productivity. Food insecurity is linked with high hyperactivity, absenteeism, aggression, and tardiness, especially in children.⁵⁰ Decreased productivity can

⁴⁵ Alisha Coleman-Jensen, "Household Food Security in the United States in 2016."

⁴⁶ "Definitions of Food Security," USDA ERS - Definitions of Food Security, 2017.

⁴⁷ "Definitions of Food Security," USDA ERS - Definitions of Food Security, 2017.

⁴⁸ Alisha Coleman-Jensen, "Household Food Security in the United States in 2016," 1.

⁴⁹ "Farm bill: Improving Diets of Low-Income Americans through Snap Pricing Incentives: A Public Health Priority," *Johns Hopkins Center for a Liveable Future*, 2012, https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-liveable-future/pdf/projects/fsp/farm_bill/FarmBill-brief-SNAPpricing2012.pdf, 2-3; These families also lack access to lean and dense proteins such as meat that adds high quality substance to diets. Like fruits and vegetables, meat is often wasted throughout the food supply value chain.

⁵⁰ Janet M. Currie, "Feeding the Hungry: Food Stamps, School Nutrition Programs, and WIC," in *The Invisible Safety Net: Protecting the Nations Poor Children and Families* (Princeton, NJ: Princeton University Press, 2008), 62.

affect performance in schools and the workforce.⁵¹ And, decreased health can lead to increased doctor or hospital visits and consequently increased bills. Both the long term and long short effects of this poverty can further perpetuate families and individuals' cycle of poverty.

Much of the lack of healthy food consumption by low and very low food security families is correlated with lack of access. According to Johns Hopkins Center for a Liveable Future, low-income Americans are more likely to live in neighborhoods with limited access to supermarkets. Consequently, they rely on small-scale groceries that either do not supply produce or price the produce at an unaffordable price.⁵² This lack of access often falls in "food deserts." According to the American Nutrition Association, food deserts are "parts of the country void of fresh fruit, vegetables, and other healthful whole foods, usually found in impoverished areas" which are largely caused by "a lack of grocery stores, farmers' markets, and healthy food providers."⁵³ While there are multiple ways to measure individual level and neighborhood level access to food stores, most food desert measures consider the following: accessibility to sources of healthy food measured by distance to a store or by the number of stores in an area, individual-level resources that affect accessibility (such as family income or vehicle availability), and neighborhood-level indicators of resources such as the average income of the neighborhood and the availability of public transportation.⁵⁴ One particular measure considers "low-income census tracts where a significant number (at least 500 people) *or* share (at least 33 percent) of the population is greater than a half of a mile from the nearest supermarket, supercenter, or large grocery store for an urban area or greater than 10 miles for a rural area." Under this measure, approximately 54.4 million people (17.7 percent of the U.S. population) live in tracts that are low-income and low access and are more than ½ mile or 10 miles from the nearest supermarket.⁵⁵ A disproportionate amount of these deserts lie in the south east quarter of the United States.

Even when low and very low food security families have access and money to go to a supermarket, they are faced with the decision of what to buy—high calorie, energy dense, low cost, but nutrient poor food, or low-calorie, sometimes perceived as less tasty, expensive, but nutrient rich food. Oftentimes and understandably, the families will choose the high-calorie,

⁵¹ Lawrence Barriner, "Fresh Food for ALL: Improving Access to Healthy Food in Alabama," *Massachusetts Institute of Technology*, 2014, https://dusp.mit.edu/sites/dusp.mit.edu/files/attachments/project/ECN_report_5.pdf.

⁵² "Farm bill: Improving Diets of Low-Income Americans through Snap Pricing Incentives," 2-3.

⁵³ "USDA Defines Food Deserts," *American Nutrition Association*, 2015.

⁵⁴ "Food Access Research Atlas," USDA ERS, December 5, 2017, <https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/>.

⁵⁵ "Food Access Research Atlas," *USDA ERS*.

nutrient lacking foods.⁵⁶

Existing measures attempt tackle this food security: the USDA notes, “About 59 percent of food-insecure households participated in one or more of the three largest Federal food and nutrition assistance programs during the month prior to the 2016 survey (food stamps (SNAP); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program).”⁵⁷ These measures were enacted in the 1970s when threats of complete starvation plagued the country. The programs were largely successful in greatly reducing this type of extreme hunger. However, hunger has been redefined. Malnutrition no longer always means skin and bones starving. Food insecurity is now even correlated with obesity, which is not hunger but a *malnutrition* issue nonetheless.⁵⁸ Efforts to adapt these programs to better fit the rise in a different kind of malnutrition are being made; however, there is much more room for growth and reformation of initiatives.

Here, we are brought back to the issue of food waste. As detailed above, a huge aspect of food insecurity is lack of access to and lack of choice for nourishing foods such as proteins, fruits, and vegetables. These healthy foods encompass a huge portion of the food wasted from every level of the value chain. This is a paradox. 12% of the population in the United States is food insecure while Americans throw away 161 billion tons of food which is largely made up of nutritious food, not packaged food commodities. Food waste is not only an economic and environmental issue, but also a social issue. In the following section, I explore the roots from which this paradox evolved.

Describing Food Waste as a Social Issue

The scope of food waste in the midst of widespread food insecurity in the United States is unsettling. Something is paradoxical about the coexistence. Scholars have taken note of this paradox as a social issue. Deishin Lee of Boston College’s School of Management writes in “Combining Two Wrongs to Make Two Rights,” “It seems paradoxical that food insecurity and food waste can concurrently be systemic problems, especially in a high-income country. The loss of fruits and vegetables that could improve the nutritional status of food-insecure households is

⁵⁶ “Farm bill: Improving Diets of Low-Income Americans through Snap Pricing Incentives,” 3. Humans are born with a bias towards sweet and away from bitter and sour foods. If tastes are not learn—by lack of exposure or lack of access—the decision to continue to purchase these low calorie foods can be perpetuated, further effecting the health outcomes (<https://www.ncbi.nlm.nih.gov/books/NBK305168/>).

⁵⁷ Alisha Coleman-Jensen, “Household Food Security in the United States in 2016.”

⁵⁸ Janet M. Currie, “Feeding the Hungry: Food Stamps, School Nutrition Programs, and WIC,” 62-63.

particularly senseless.”⁵⁹ Baglioni, Di Pieri, and Tallarico, who come from a globalized perspective, published “Surplus Food Recovery and Food Aid: The Pivotal Role of Non-profit Organizations. Insights From Italy and Germany.” In the article, they write, “Food security and food waste are unanimously recognized as relevant issues affecting the whole society and should be therefore acknowledged as a priority on the public agenda.”⁶⁰ Mickey Gjerris, from University of Copenhagen’s Department of Food and Resource Economics, and Silvia Gaiani from The University of Bologna’s Department of Agro-Food Sciences worked together to write “Values in the Trash: ethical aspects of food waste.” They argue, “throwing away food feels morally wrong, as it is such a tangible sign of richness bordering on decadence. When dealing with food waste as a cultural phenomenon and hung as a global issue, it is hard not to react at such visible inequality in the world. Food waste thus becomes a symbol of human injustice that hits us right in the face.”⁶¹ The troubling coexistence of food waste and food insecurity is “senseless,” “relevant,” and “unjust.”

In order to appropriately address the complex issue surrounding the paradox, it is important to explore and attempt to pinpoint the underlying roots of the problem in America. I contend that the origins of this gap between food insecurity and food abundance lie in a socially rooted culture of abundance and waste that, particularly in relation to food, has partially developed from Americans’ increasing distance from the true supplier of their food—the land.

***Wendell Berry’s Depiction of Industrialization’s effect on American Stewardship:
America’s Increasing Distance from the Land***

Wendell Berry, an American novelist, poet, environmental activist, cultural critic, and farmer, has spent countless pages and years describing Americans’ increasing distance from the land. Berry claims his lifelong task is to defend “the complex accomplishment of knowledge, cultural memory, skill, self-mastery, good sense, and fundamental decency — the high and

⁵⁹ Deishin Lee, Erkut Sönmez, Miguel I. Gómez, and Xiaoli Fan, 2017, "Combining two wrongs to make two rights: Mitigating food insecurity and food waste through gleaning operations," *Food Policy* 68, 40-52. *Academic Search Complete, EBSCOhost*, 40-41.

⁶⁰ Simone Baglioni, Benedetta Pieri, and Tatiana Tallarico.,2017, "Surplus Food Recovery and Food Aid: The Pivotal Role of Non-profit Organisations. Insights From Italy and Germany." *Voluntas: International Journal Of Voluntary & Nonprofit Organizations* 28, no. 5: 2032-2052. *Academic Search Complete, EBSCOhost*, 2032.

⁶¹ M. Gjerris and S. Gaiani, “Values in the Trash: ethical aspects of food waste,” in *Envisioning a future without food waste and food poverty: societal challenges*, ed. by Leire-escajedo San-Ezifanio and Mertxe De Renobales Scheifler, 2015; It is interesting that the later two groups of authors come from European, rather than American, backgrounds. This seemed to be a general trend in my research.

indispensable art — for which we probably can find no better name than ‘good farming.’”⁶² By farming, Berry means proper care for an “immeasurable gift.”⁶³

Many of his works respond to and critique a specific type of landlord/tenant farming from the 1940s and 1950s in which harmful farming practices led to detrimental waste. Consequently, his writings often center around an argument for agriculture and against industrialism. The specific detrimental farming practices that Berry critiques have been greatly reinvented and are now less wasteful. While not perfect, modern precision farming makes it easier and more common to more efficiently use environmental resources to mass produce food than it used to be.⁶⁴ Berry articulates a romantic view of the tenant farmer lifestyle. In his perfect world, we would all subscribe to this lifestyle—knowing and growing our food. In using Berry to describe the origin of a culture of waste, I am not suggesting we should all be tenant farmers. We do not need to follow Berry’s suggestions as a handbook. However, Berry’s arguments about farming offer something more than just suggestions on farming. They relevantly critique a wasteful lifestyle for many Americans.

Berry explains this bigger picture: “I believe that this contest between industrialism and agrarianism now defines the most fundamental human difference, for it divides not just two nearly opposite concepts of agriculture and land use, but also two nearly opposite ways of understanding ourselves, our fellow creatures, and our world.”⁶⁵ He writes about farms, but this condition of farms stems from a fundamental difference in ways of understanding ourselves and our world. Berry’s picture of farming and his offerings on the human condition are relevant, and they help us to dig into why the massive gap between food waste and food insecurity exists.

Here, I describe Berry’s critique of industrialism and American distancing of the land. To Berry, the way of toxic industrialism is “the way of the machine.” For an industrialist who adopts the way of the machine, the machine is “an explanation of the world and of life.”⁶⁶ All understanding comes from the logic of a machine. Consequently, industrialism can grant “no value that is not utilitarian.” Values that do not strive for usefulness, such as beauty, ornamentation, play, intimacy, are not valued, even if they are important. When this logic is applied to farming and forestry, they become “forms of mining,” and the land is abused at every

⁶² Wendell Berry, “The Agrarian Standard,” *Orion Magazine*, 2002, <https://orionmagazine.org/article/the-agrarian-standard/>.

⁶³ Berry comes from a Christian background and perspective; the “immeasurable gift” is the gift of land from God

⁶⁴ Of course, they are not perfect. That is why food waste on farms is the second largest producer of waste.

⁶⁵ Wendell Berry, “The Agrarian Standard,” *Orion Magazine*

⁶⁶ Wendell Berry, “The Agrarian Standard,” *Orion Magazine*.

use.⁶⁷ This machine-like industrialist way, which permeates into individuals' lifestyles, eliminates the most fundamental aspect for farming and living for Berry: stewardship.

Berry describes stewardship in a chapter called "The Gift of Good Land" from *The Art of the Commonplace: Agrarian Essays of Wendell Berry*. For Berry, who comes from a devoutly Christian perspective, land is a gift because "the people who are to possess it did not create it."⁶⁸ Those to whom the land is given must act gratefully, humbly, and neighborly with their gift. They must practice good husbandry towards their gift. Berry calls this husbandry an "elaborate understanding of charity" which extends to cover both human and nonhuman beings. The charity is reciprocal—both ends giving, both ends receiving.⁶⁹ To act with this reciprocal husbandry is to act as a steward. For Berry, the call to stewardship is a *moral* predicament for humans. It involves "everyday proprieties in the practical use and care of created things."⁷⁰ Each day, the human is to partake in a reciprocal, humble, and grateful relationship with their gifts—one of which is the land. This was the way of the American farmer.⁷¹

In his book *The Unsettling of America: Culture and Agriculture*, Berry articulates how industrialism divorced Americans from this deep sense of stewardship, specifically with the land. Before the rise of the machine and industrialization, Americans had no option but to have a deep connection to the land described above. The land sustained them—nutritionally, for shelter. So, in a reciprocal relationship with the land, they cared deeply for the land. They were stewards of the land. They shared a deep connection to the land. I would be remiss to fail to acknowledge that this lifestyle was not easy.⁷² But, it created a thrifty and frugal use of resources, such as food.

Over time, as the economy industrialized and the "lifeway of the machine" has become dominant, Americans' geographic distance from the land grew. With a rapidly growing population, the number of farms in the United States shrunk by 70 percent between 1935 and

⁶⁷ Wendell Berry, "The Agrarian Standard," *Orion Magazine*.

⁶⁸ Wendell Berry, *The Art of the Commonplace: Agrarian Essays of Wendell Berry*, 295; Berry's philosophy is deeply rooted in Christian thought. He parallels the gift of land from God today the stories of the gift of the land to Adam and Eve and the gift of the Promised Land to the Israelites. He notes that the story of the Promised Land is closer to the condition today, as those who received the land were sinful and undeserving.

⁶⁹ Wendell Berry, *The Art of the Commonplace: Agrarian Essays of Wendell Berry*, 297.

⁷⁰ Wendell Berry, *The Art of the Commonplace: Agrarian Essays of Wendell Berry*, 299.

⁷¹ "...the care of the earth is our most ancient and most worthy and, after all, our most pleasing responsibility. To cherish what remains of it, and to foster its renewal, is our only legitimate hope." from the *Art of the Common Place*

⁷² From the 1790s to the 1940s, Americans had a very poor standard of living on their subsistence farms. So, while they had a deep connection to the land, this connection derived from a place of necessity, and this place was often not the most comfortable or desirable as it can be romantically perceived.

1997. The number has continued to go down since 1997. Urbanization has shifted the population into crowded cities. Few small farms exist. Meanwhile, the acreage on each farm has more than tripled.⁷³ These large farms are mostly corporate enterprises-- mechanized and industrialized. Consequently, it is even *more* difficult for Americans to adopt this reciprocal stewardship with the land and. Paralleling this challenge, it more difficult for Americans to adopt a sense of stewardship with the products from the land, which is the basis for of all food.

Now, so many Americans, even many of the few that still farm, have adopted the logic of the machine. They have become *exploiters*. Berry draws a clear distinction between the way of the exploiter and the way of the nurturer, the steward:

I conceive a strip-miner to be a model exploiter, and as a model nurturer I take the old-fashioned ideal or idea of a father. The exploiter is a specialist, an expert; the nurturer is not. The standard of the exploiter is efficiency; the standard of the nurturer is care. The exploiter's goal is money, profit; the nurturer's goal is health—his land's health, his own, his family's, his community's, his country's. Whereas the exploiter as of a piece of land only how much and how quickly it can be made to produce, the nurturer asks a question that is much more complex and difficult: what is carrying capacity? How much can be taken from it without diminishing it?... The exploiter wishes to earn as much as possible by as little work as possible; the nurturer expects, certainly, to have a decent living from his work, but his characteristic wish is to work as well as possible... The exploiter typically serves an institution or organization; the nurturer serves land, household, community, place. The exploiter thinks in terms of numbers, quantities, hard facts; the nurturer in terms of character, condition, quality, and kind.⁷⁴

This shift Berry describes is not just a geographic shift from the farms to the cities. It includes a *cultural* shift. Reciprocal relationships have transitioned to relationships of exploitation. The industrialization of the food industry as a whole, from the farm to the retailers, is a prime example of this “exploiter.” The machines have turned the food economy from a nurturer whose goal is health, good work, and stewardship to an exploiter who cares about efficiency, quantity, and profit. And, many modern Americans are prime examples of the “exploiter.” They desire immediacy, abundance, and efficiency rather than quality and care.

The nurturer, the agrarian or one who cherishes his gifts of food or land, understands and follows *limits*. He knows that there is “this much and no more.” He understands that “there is only so much land, so much water in the cistern, so much hay in the barn, so much corn in the crib, so much firewood in the shed, so much food in the cellar or freezer, so much strength in the

⁷³ Jonathan M. Bloom, *American Wasteland*, 65.

⁷⁴ Wendell Berry, *The Unsettling of America: Culture and Agriculture* (San Francisco: Sierra Club Books, 1986), ch.1.

back and arms — and no more.”⁷⁵ Thus, he takes care of his resources, protecting them with careful attention to quality and kind. He practices frugality and thrift.

On the other hand, those who follow the way of the machine do not understand limits. The values of industrialization have trickled down into American culture. “Personal mobility, extractive machinery, long-distance transport, and scientific or technological breakthroughs” violate limits.⁷⁶ If goods run out, they are simply imported or invented somewhere else. Americans have come to value this limitless abundance, thus the exploitation relationships in the food value chain and in American individuals. The product is no longer savored or prized; it is not valued for what it is. Instead, it’s valued for its quantity. As the exploitation and industrialization continue, Americans have transitioned from a culture of frugality and thrift, from a culture that cherishes and stewards the land, to a culture of abundance. Number is valued over care and stewardship. The way of the machine is a way of life. This is largely the way of the American food value chain.⁷⁷

Journalist Jonathan Bloom deems this a lifestyle a “culture of abundance.” While not writing in response to or in agreement with Berry, Bloom articulates similar trends. He speaks specifically about this culture in relation to modern food culture: “In addition to variety, abundance dominates today’s food culture.”⁷⁸ He documents, “Once mass production of food became a reality, these attitudes slowly trickled into our supermarkets and our sub-conscience. With that excess at every turn, America transitioned from a grow-your-own, ration-adhering nation to a culture of excess.” Prepared and fast food have perpetuated this expedient excess. Choice and abundance, he says, are the “main course” of any food culture.⁷⁹ The National Center for Biotechnology Information provides statistics to help support such claims. Between 1977-1978 and 2005-2008 in the United States, the share of calorie intake comprising from food eaten away from home increased from 18 to 32 percent. Meanwhile, the percentage of time spent on food preparation, along with calories consumed from food at home, decreased in all socioeconomic groups between 1965 to 2008.⁸⁰

⁷⁵ Wendell Berry, “The Agrarian Standard,” *Orion Magazine*.

⁷⁶ Wendell Berry, “The Agrarian Standard,” *Orion Magazine*

⁷⁷ Berry argues that policy and culture also presents food was a weapon, transferring it from a life-giving and life-affirming role in the economy into something more dangerous (*The Unsettling of America*).

⁷⁸ Jonathan Bloom, *American Wasteland*, 66.

⁷⁹ Bloom, *American Wasteland*, 67

⁸⁰ <https://www.ncbi.nlm.nih.gov/books/NBK305168/>

With a culture of abundance comes an abundance of waste. Because Americans have access to so much more than they could ever use, they are obliged to waste more. The increased supply, reduced prices, and absurd abundance have led to a devaluation of food.⁸¹ It is so easily accessible that it simply is not as appreciated. While understanding this big picture concept is important to consider, it is essential to acknowledge that much of the impetus behind the industrialization of food *did* consider value. Growing largescale, the food system leaders thought, would make food less expensive and more plentiful; it would secure America's food supply. Earl Butz, the U.S. Secretary of Agriculture at the time of big industrialization (1970s), famously proclaimed, "Get big, or get out!"⁸² For many those who are experiencing poverty, this *monetary* "devaluation" from industrialization is helpful; it provides access to foods that used to be almost impossible to reach.⁸³ However, the added valuation has not developed equally across socioeconomic levels. The shift did not completely "secure America's food supply" as it had hoped.

On the other side, for those who can afford to buy unto abundance, this devaluation can be detrimental. Many in the higher SES have capitalized on the cheaper plenty in a way that has created devaluation.⁸⁴ If the American has bought into the way of the machine *and* food has been devalued, they are more likely to waste. Americans, in the wake of abundance and food devaluation, have a waste problem. In his article "Wasted," Berry accuses both the produces and the consumers of subscribing to this culture of waste: "It is the fault of an economy that is wasteful from top to bottom—a symbiosis of an unlimited greed at the top and a lazy, passive, and self-indulgent consumptiveness at the bottom—and all of us are involved in it."⁸⁵ He says, "The truth is that we Americans, all of us, have become a kind of human trash, living our lives in

⁸¹ Bloom, *American Wasteland*, 67.

⁸² https://www.wku.edu/gifted/project_gems/documents/the_industrial_food_system.pdf

⁸³ Cited benefits of the industrial food include: cheaper food, greater variety/availability, longer shelf life availability, fewer geographic limitations, less dependence on human labor, decreased time to market (<https://www.brighthub.com/environment/science-environmental/articles/73606.aspx>); These benefits align with the mechanized logic/process that Berry fights against, but they align positively with social justice efforts to expand food access. Here, the priority of Berry and food justice/equity chafe. However, I believe there is a way the two can fit together. We can address the mechanized culture of abundance/waste without sacrificing food quality/nurture and without creating abundant waste in the higher SES groups.

⁸⁴ Critics might argue against this claim—that while the industrialization has led to heavy abundance in some of the higher SES groups, it is wholly worth it to continue on in this manner in an effort to keep resources less expensive for all SES levels, even if the effects are not super sustainable.

⁸⁵ Wendell Berry, "Waste," *Now Activism - Wendell Berry*, http://www.swaraj.org/shikshantar/nowact_wendellwaste.htm.

the midst of a ubiquitous damned mess of which we are at once the victims and the perpetrators.”⁸⁶

The culture of waste is intensified by the distance from the land, especially in urban areas with complete lack of exposure to farming. First, Americans seek abundance. When there is waste left over from the abundance, they are left with a choice: to toss the waste, or to do something else with it. Because of the geographic and psychological distance from the land, those making the decision often do not know where this food came from. Instead, they perceive, perhaps subconsciously, that “food does not come from the ground; it arrived magically in bright frozen packages, from a delivery man’s car, or on polystyrene trays.”⁸⁷ Children cannot recognize “‘real’ or ‘whole’ foods,” and they cannot “identify the plant, tree, or bush that produced what’s on their plates.”⁸⁸ Because we are less likely to waste when we know where the food came from, this distance from food perpetuates the food waste problem.⁸⁹

And, according to Wendell Berry, this is the current condition of modern Americans. Of course, there is more happening in the background that shapes and forms society, industrialization, and farming. But, Berry has used this narrative specifically to highlight and emphasize what he sees to be a general trend in American culture. Once rooted in a deep sense of stewardship, Americans have moved into the cities and towards an industrial economy. The cultures and values of this economy—of exploitation—have infiltrated the values of the Americans. They seem to no longer feel a sense of nurturing stewardship towards gifts of food or land, but instead a desire for exploitation. The greedy exploitation has left the American in a culture of abundance and a consequent culture of waste. This progression has permeated the food industry—Americans, disconnected from stewardship of the land, desire abundance and have little regret wasting the excess. Berry, once again a devout Christian who sees stewardship, a form of reciprocal charity, as a moral necessity, sees this abundance as a moral issue. Again, Berry’s views are romantic and idealistic. However, his narrative provides helpful insight into a history effects American food culture, which is a culture of abundance.

Returning to the Paradox: Food Abundance and Food Insecurity

⁸⁶ Wendell Berry, “Waste.”

⁸⁷ Bloom, *American Wasteland*, 65.

⁸⁸ Bloom, *American Wasteland*, 65.

⁸⁹ Bloom, *American Wasteland*, 64.

The issue described above is inherently social—the problem is perpetuated by society’s values. This “culture of abundance” that plagues so many Americans, however, is not available for all, as briefly touched upon in the above section. Some *choose* not to subscribe to the culture of abundance, and still live comfortable, joyful lives. However, some Americans experiencing poverty do not have the option to adopt the culture of food abundance. Instead, they are stuck in low or very low food insecurity. Thus, there is a massive gap. On one side of the gap, Americans consume and purchase so much food that they are left with excess and they waste it. On the other hand, Americans are left without access to or funds for nutritious foods. This gap is deep-seeded and problematic. As described above, it is at least partially driven by this divorce from stewardship and run to industrialization.

Food waste is inherently an environmental issue—organic waste releases methane into the air. Food waste is an economic issue—millions of dollars are wasted throughout the production process. Food waste is also a *social* issue. The *roots* of the problem are largely social. American values have transitioned from stewardship to abundance and waste. The massive amount of food waste is *one* consequence of this shift. While this food is wasted, Americans suffer from food insecurity. Clearly, a new cultural shift is required.⁹⁰ But, simply saying “we must change our culture” is not enough. Political action must be taken to incentivize, activate, and promote the social and economic change in the food value chain. The political initiatives must be aware of these deeply social roots in addressing a way to look forward. In the following section, I examine current initiatives in place to tackle the coexistence of food waste and food insecurity. The purpose of the paper is to consider the social manifestations and roots of food waste and then theorize the best frameworks to addressing the issue. Because of this largely theoretical purpose, I am bracketing discussion on specific policy suggestions and on the politics behind enacting laws that would promote the cause.

Analysis of Initiatives:

Initiatives to reduce food waste exist. They exist in governmental programs, laws, grassroots organizations, campaigns, and consumer behaviors. As described in the previous sections, the issue of food waste is vast in scope in all stages of production. Identifying the most efficient and effective means of reducing this food waste is complex. In this section, I explore two sectors of existent initiatives: large scale and small scale. Large scale initiatives are those

⁹⁰ Bloom, *American Wasteland*, 86.

that address or seek to reach areas of multiple states at a time. They include federal initiatives, policies, and nation-wide campaigns. Small scale initiatives are those that seek to reach smaller communities: a state, a city, or a community within a city. They include grassroots organizations, non-profits, and state policy/initiative.

For the purpose of this paper, the initiatives considered broadly address food waste, rather than tackle a specific part of the production process. While quantitatively the most amount of food waste occurs at the consumer stage of production, and this stage should be focused on, all stages are important to address. And, for the purpose of this paper, the initiatives analyzed and discussed hone in on food waste as a *social issue*.⁹¹ As described above, the root cause for food waste is at least partly inherently cultural. And, the gap between food waste and food insecurity has resulted partially from this social narrative of waste. Addressing this particular aspect of food waste is important. The initiatives in place to address this issue specifically often attempt to capitalize on the food waste that exists and reallocate it to those who need it. Other initiatives might strive to eliminate food waste as much as possible. These initiatives are also essential to closing the gap. The overflowing benefits of reducing food waste will help those who are food insecure indirectly. However, meanwhile, the existing food waste should be turned into a food resource.

First, it is important to understand that action *is* required. The support and actions of producers *and* consumers are utterly necessary in tackling the issue of food waste. In *Food Wars*, a book about “ideas of how the future of food is to be shaped and conceived,” Lang and Haesman call for the necessity of *radical* change when it comes to food and food policy.⁹² For them, “radical” means it has the “power to change consumer expectations... to change the basics for competition... and the power to change industry economics.”⁹³ Radical change, which might come from an large-scale policy or small-scale initiative, infiltrates all attitudes of the food industry from the producer to the consumer.⁹⁴ Such drastic change is needed because of the scope of the issue and the undercurrents of the issue that have formed over the years. Lang and

⁹¹ This focus does not have the intention of belittling initiatives that tackle the environmental or economic effects of food waste. These initiatives are great and necessary in the big picture. This focus is simply to keep my paper tailored to the specific interest of food waste as a social issue.

⁹² Tim Lang and Michael Haesman, *Food wars: the global battle for mouths, minds and markets* (London: Routledge, 2016): 8; They use world business expert Gary Hamel’s definition for radical: having the “power to change consumer expectations... to change the basics for competition... and the power to change industry economics.”

⁹³ Tim Lang. et al, *Food wars*, 6.

⁹⁴ Lang et al., *Food Wars*, 6.

Haesman argue: “beneath the apparently calm surface of the foods supply chain (which, for all scandals and monetary crises, has increased output and fed more people than ever before in human history) there are powerful undercurrents.” Food is a powerful aspect of life and culture, and the way it is produced and consumed is deeply embedded within a society. In order for change to be effective within the food industry, it must address the powerful undercurrents that dictate the means and process of food production and consumption.⁹⁵

Lang and Haesman address food policy broadly. The “undercurrents” of the food waste issue specifically are undercurrents of a mechanized culture of abundance and waste, as described by Wendell Berry and Jonathan Bloom. Journalist Jonathan Bloom passionately brings the discussion of radical change to the project of food waste in his book *American Wasteland: how America throws away nearly half of its food (and what we can do about it)*. He recognizes waste as an environmental, social and economic issue. Because of the complexity of the issue, Bloom calls for this radical change which Lang and Haesman deem so necessary. In his chapter “If I Were the King of the Forest,” Bloom specifically appeals for a national “food waste czar,” a national public relations campaign, and an elimination of food from landfills.⁹⁶ These suggestions are not my suggestions, but the specific and radical recommendations demonstrate provide a clear example of an attempt to change the powerful undercurrents in the culture of the production and consumption of food. They aim to change the “culture of waste” which has troubled American culture since post-World War II rationing.⁹⁷ Bloom pleads for a twenty-five percent reduction in food waste. He sees this as an attainable goal that could feed almost all hungry Americans if waste is recovered.⁹⁸

In “Reducing Food Waste through Charity: exploring the giving and receiving of redistributed food,” E.G. Vlaholias, K. Thompson, D. Every, and D. Dawson also recognize the importance of radical changes that address the undercurrents. Lang and Haesman spoke to general food policy, Bloom brought us down to food waste, and Vlaholias carries us specifically to initiatives that address food waste *and* food insecurity. As scholars who are focused on reducing food waste through donations and charity, the authors are sensitive to the close ties that

⁹⁵ Lang et al., *Food Wars*, 8.

⁹⁶ Bloom, *American Wasteland*, 292-294.

⁹⁷ Bloom, *American Wasteland*, 90.

⁹⁸ Bloom, *American wasteland*, 298.

people have with food.⁹⁹ These ties must be carefully and thoughtfully considered. Reallocation of “food waste” to those who are food insecure is tricky terrain. If the policies or initiatives do not carefully consider both the givers and receivers of food, the initiative could be condemned as morally discriminatory, hierarchical, and paternalistic.¹⁰⁰ In order to fight against this kind of charity policy or initiative, they recognize the importance in a holistic perspective: “There is no one food policy or one food-policy maker: there are policies and policy-makers, all of which contribute to the overall process.”¹⁰¹ They recognize policy making as “essentially a social process” because it must involve people and organizations from all walks, even those who may not even call themselves policy makers.”¹⁰² When policy making considers and listens to all those involved in the production and consumption process, it is less likely to ignore the capabilities and justice of those experiencing food insecurity.

Lang, Haesman, and Bloom have argued for holistic change that addresses the culture and undercurrents of consumer behavior through some kind of initiative. Because of the consumer culture in which we Americans live, radical change is necessary to make a sustainable and lasting change in food production. Radical change that effects the undercurrents takes time and is an incredible long run goal. However, the best way that this radical change is manifest in the short run, to reaching towards the long run goal, is up for debate. In the following sections, I explore two broad categories of approaches to reallocate food waste: a top-down, big scale approach and a bottom-up, small scale approach. I analyze examples of each approach—outlining the costs and benefits of both, examining their efficiency in redistributing food waste. I find that both approaches have a place in the redistribution of food waste. Both approaches have fallbacks, but also great benefits. For this reason, the solution should be *multifaceted*, making use of both approaches. And, it should cover many different sectors—from the producer to the distributor and the consumer. This approach, political and social in nature, will best effect radical change.

Top-down, Large Scale Initiatives:

⁹⁹ E.g. Vlaholias et al., “Reducing Food Waste through Charity: Exploring the Giving and Receiving of Redistributed Food,” in *Envisioning a Future without Food Waste and Food Poverty*, ed. Leire San Epifanio and Merxte Scheifler, 2015, 1-10.

¹⁰⁰ Some arguments against such charitable giving include the fact that it attacks symptoms rather than causes, it may lead to favoritism instead of fairness, it would not actually change society or solve food waste, it might become a substitute for real justice (this needs to be carefully cautioned against in reallocation of food). Further information on these counterarguments to charities of the like can be found here: http://www.bbc.co.uk/ethics/charity/against_1.shtml.

¹⁰¹ E.g. Vlaholias et al., “Reducing Food Waste through Charity: Exploring the Giving and Receiving of Redistributed Food,” in *Envisioning a Future without Food Waste and Food Poverty*, ed. Leire San Epifanio and Merxte Scheifler, 2015, 13.

¹⁰² E.g. Vlaholias et al., “Reducing Food Waste through Charity,” 13.

One means of approaching the reallocation of food waste to those who are food insecure is through a top-down, large scale approach. Several national large scale initiatives have been instated to fight food waste, but not necessarily reallocate food “waste” to the food insecure. In 2010, the EPA’s Food Recovery Challenge offered businesses and organizations data management software and technical assistance to assist them in measuring and reducing their food waste.”¹⁰³ EPA’s 2012 “Food: Too Good to Waste” campaign created a community development toolkit to “help families and individuals waste less food at home.”¹⁰⁴ The program began only as a pilot in different communities. In 2013, the USDA launched a “US Food Waste Challenge” to encourage more widespread action on food waste. Their goals were to disseminate practices to “reduce, reuse, and recycle” and to stimulate these practices across the entire food chain. By October 2014, over 1,000 people were participating in the program. In the broader scheme of America, these programs were showing little success in their initiatives.

Then, in 2015, the Obama administration launched the first *domestic* goal on food waste: to reduce food loss and waste in half by 2030. This initiative is concurrent with a United Nation’s food waste program goal that sets same 50% reduction by 2030 goal. The Obama administration and the EPA began to work with communities, organizations, and businesses. They began to partner with state, tribal, and local governments to reduce food loss and waste.¹⁰⁵ They measured success from two baselines: the pre-consumer food loss (from 2010’s 218.9 pounds per person per year to 109.5 pounds) and the retailer/producer loss (from 133 billion pounds to 66 billion pounds).¹⁰⁶ To kick off the initiative, the EPA hosted a Food Waste Summit in which leaders from across the food production industry and studies. The keynote address articulated the many goals of the food waste challenge ending with, “and most importantly we will save people from going hungry.” Here, the federal government begins to look at food waste and food insecurity in tandem. They promoted the new EPA Food Recovery Hierarchy which places “Feed Hungry People” high on the list as second behind Source Reduction.¹⁰⁷ The summit extensively covered initiatives from the federal to the community or farm level.¹⁰⁸ It successfully

¹⁰³ Elise Golan, "The U.S. Food Waste Challenge," *U.S. Department of Agriculture*, 2015, accessed from University of Pennsylvania libraries, <https://repository.upenn.edu/cgi/viewcontent.cgi?article=1020&context=thelastfoodmile>, 12.

¹⁰⁴ Elise Golan, "The U.S. Food Waste Challenge," 12.

¹⁰⁵ "United States 2030 Food Loss and Waste Reduction Goal," *EPA*, December 11, 2017, <https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal>.

¹⁰⁶ "United States 2030 Food Loss and Waste Reduction Goal," *EPA*.

¹⁰⁷ The third is Feed Animals, the fourth is Industrial Uses, the fifth is Composting, and the sixth is Landfill/Incarceration.

¹⁰⁸ Descriptions and videos from the conference can be found on this website: <http://www.serdc.org/Program>

identified key activities necessary to meet goals: seek prevention strategies, use the food recovery hierarchy, increase public awareness, improve the data, forge new partnerships, clarify date labels and food safety, and build food loss and waste infrastructures.¹⁰⁹ Many of the sessions within the conference specifically covered food recovery: “Food Rescue and Donation,” “Local and State Programs - Paving the Way to Increased Food Recovery,” The Business of Food Recovery, and “Mapping Our Way Forward on Food Recovery.”

While the 2030 goal is “lofty and aggressive,” a movement has emerged from this campaign. Since the initial summit, several laws and initiatives have been passed that encourage the elimination of food waste and redistribution of food. The FY2016 Omnibus expanded tax deductions for donated food.¹¹⁰ This tax in particular was helpful in promoting the reallocation of food. USDA launched a “Choose my plate” which offers tips and techniques for decreasing food waste in the household.¹¹¹ They hosting *annual* summits to further discuss progress and the newest and most efficient ways to eliminate waste in a way that aligns with the Food Recovery Hierarchy. And, they participate in ongoing work with the World Resource Institute to develop a standard measuring protocol for food waste.¹¹² In addition, the USDA has done their own part in reducing food waste through educational campaigns and technological advancements/research.¹¹³ USDA resources are available about salvaging food waste, composting, managing and transforming food streams, and sustainable management of food tools.¹¹⁴

The above initiatives have been put into action and made a difference, even if not large in the scheme of all American waste. However, not all of the governmental efforts have been successful. For two consecutive years, a bill called the Food Recovery Act of 2017 has been introduced into congress. The bill “provides funding and establishes requirements to reduce food waste and standardize date labeling on food.”¹¹⁵ Among many funded initiatives, the bill would

¹⁰⁹ “A Call to Action by Stakeholders: United States Food Loss & Waste 2030 Reduction Goal,” EPA, March 2017, <https://www.epa.gov/sustainable-management-food/call-action-stakeholders-united-states-food-loss-waste-2030-reduction>.

¹¹⁰ “A Call to Action by Stakeholders: United States Food Loss & Waste 2030 Reduction Goal,” EPA; The 1996 Bill Emerson Good Samaritan Food Donation Act was a previous bill that made possible many of the initiatives started in the campaign. In an effort to encourage the donation of food to nonprofit organizations, the bill provides the donors with liability protection: “as long as the donor has not acted with negligence or intentional misconduct, the company is not liable for damage incurred as the result of illness.” The subsequent 2008 U.S. Federal Food Donation Act of 2008 further specifies the language in the bill. More information on the 2016 bill can be found here: <https://www.chlpi.org/wp-content/uploads/2013/12/Food-Donation-Fed-Tax-Guide-for-Pub-2.pdf>.

¹¹¹ “Let’s Talk Trash,” *Choose My Plate*, United States Department of Agriculture, January 25, 2017, <https://www.choosemyplate.gov/lets-talk-trash>.

¹¹² “A Call to Action by Stakeholders: United States Food Loss & Waste 2030 Reduction Goal,” EPA.

¹¹³ They are detailed on this page: https://www.usda.gov/oce/foodwaste/usda_commitments.html.

¹¹⁴ “A Call to Action by Stakeholders: United States Food Loss & Waste 2030 Reduction Goal,” EPA.

¹¹⁵ Food Recovery Act of 2017, S.1680, 115th Congress, 2017, <https://www.congress.gov/bill/115th-congress/senate-bill/1680>

instate a Food Recovery Liaison within the Department of Agriculture (USDA), expand the liability protections for the donation of food, and require that companies receiving federal food service contracts donate surplus food to nonprofit organizations that assist food-insecure people. It directly addresses the correlation between the food insecure and food waste, incentivizing and in fact mandating that companies reallocate wasted food. However, the bill has not made it past the “introduced” phase. A complementary bill was also introduced: The Food Donation Act of 2017. This bill would further expand the Good Samaritan Act by expanding “the liability protections to include donations of an apparently fit grocery product or apparently wholesome food.”¹¹⁶ Both of these acts would further address the massive lag between food waste and food insecure. However, neither bill has made it passed the “introduced” phase in congress.

Despite the inability for these bills to pass and further specifically address the issue of food waste *and* food insecurity, in 2016, more than 950 Food Recovery Challenge Participants had prevented and/or diverted 740,000 tons of food from landfills. Of this amount, 310,000 tons were donated.¹¹⁷ Again, while these numbers are large, they do not begin to cover every facet of food waste in America. That said, they are especially helpful in this urbanized, industrialized society that Berry speaks of. In a way, the initiatives help to further educate individuals, on a large scale, about their food and perhaps even its origins. While difficult to argue causation, perhaps these initiatives are helping address the cultural roots.

However, while there are public campaigns and massive amounts of resources available, sections of the country do not know that food waste is such a massive problem, especially in smaller, rural places. For example, few people in Point Clear, Alabama understand that food waste is an environmental, economic, *or* social issue.¹¹⁸ This brings the question to the forefront: which populations are the federal initiatives reaching? Are they reaching the farmers in the rural communities where the food on the farms is wasted or the geographic areas in which the summit does not have representatives? Or, are they reaching the universities who have ties to the summits, who present at the summits, who are emotionally connected to the issues? If the latter is true, the initial leap was massive, but when these followers have mastered the art of food rescue and reallocation, perhaps there would be a stagnation in success rates.

¹¹⁶ Food Donation Act of 2017, H.R.952, 115th Congress, 2017-2018, <https://www.congress.gov/bill/115th-congress/house-bill/952>.

¹¹⁷ "Food Recovery Challenge Results and Award Winners," *EPA*, December 19, 2017, <https://www.epa.gov/sustainable-management-food/food-recovery-challenge-results-and-award-winners>.

¹¹⁸ Personal experience

These large, governmental policies cannot work to reach every nook and cranny of every culture, of every geographic location in the United States. But, is difficult for a distant bill or initiative to really enact and promote food rescue and reallocation in local communities, besides providing some tool kits and incentives. This is where the governmental policies lack and the local, grassroots approaches are important. Especially when it comes to rescuing food waste that is reallocated to food within the communities, it is important for the communities to be known.¹¹⁹ The culture of waste that Wendell Berry speaks of, while most prevalent in the urbanized, connected, mechanized centers of society, pervades most of the country. Initiatives are most efficient when they reach as many of the subscribes to the culture of waste as possible.¹²⁰

Private Sphere Initiatives:

The federal policies and initiatives are essential in decreasing waste and protecting the reallocation of food “waste” to those who are food insecure. They have opened the door and provided resources, while not perfectly, to the local, private, and grassroots sectors. Meanwhile, private non-profits and organizations have been sprouting up nation-wide. These grass-roots approaches have proven largely successful in their local communities and have oftentimes even expanded to communities elsewhere. These programs are spread across the whole country, and they help in creative and diverse ways (and even if unintentionally) to tie people back to awareness of the land and waste, addressing the issue that Berry so passionately articulated. They make a precise effort to capitalize on food waste to feed those in the local communities who are food insecure. In the following section, I highlight one state program, two city programs, and several grassroots initiatives.

The rural state of Vermont is progressively tackling food waste. In 2012, the Vermont Legislature *unanimously* passed the Universal Recycling Law (Act 148). This law bans disposal of three major types of waste materials commonly found in Vermonters' trash bins over the course of six years: “blue bin recycling,” yard debris, and food scraps/organic material. The ban is initiated in steps. “Blue ben recycling” and yard debris have already been reduced. It is illegal

¹¹⁹ Economic study: “An Economic Analysis of Food Waste Solutions.” *ReFED / Rethink Food Waste*, 2018, www.refed.com/analysis?sort=economic-value-per-ton;

[https://repository.upenn.edu/cgi/viewcontent.cgi?article=1020&context=thelastfoodmile;](https://repository.upenn.edu/cgi/viewcontent.cgi?article=1020&context=thelastfoodmile)

Food waste policy finder: “U.S. Food Waste Policy Finder,” *ReFED / Rethink Food Waste*, 30 Mar. 2018, [www.refed.com/tools/food-waste-policy-finder/alabama.](http://www.refed.com/tools/food-waste-policy-finder/alabama)

¹²⁰ It’s ironic that my cultural argument pushes against the “efficient” mechanized world, while my initiative analysis argues to find the most efficient policy in addressing food waste. At first, these arguments might seem irreconcilable. However, within this world of efficiency, perhaps the best way to direct the efficiency is towards an effort that gets us back in to place and promotes social justice, reducing gaps.

for Vermont residents to toss one of these items into the general trash that heads to the landfill. The organic recycling will be mandated in policy by the year 2020.¹²¹ While this law enforces against food waste broadly, the initiative has encouraged local non-profits, such as the Vermont Community Garden Network, to encourage reallocation of food within the community. This policy has been largely successful in Vermont. Most locals have supported such sustainable policy. However, it is important to recognize that such a progressive recycling policy would not work in Alabama, where recycling, especially of organic waste, is still not widely practiced regularly. The state-policy worked well for *its* people, incentivizing them to reduce and reallocate food waste, incentivizing them away from Berry and Bloom's "culture of waste."

The city of San Francisco has also enacted several laws that have helped to eliminate food waste. Meanwhile, they have a huge support network of groups that allow for this food that they are waste that they are reducing to be reallocated to those who are food insecure. In 2003, the San Francisco Commission on the Environment set the goal of zero waste by 2020. The city was the first in America to set a zero waste goal and the first to implement a mandatory recycling and composting ordinance using three different bins. So far, San Francisco has reached an 80% diversion rate.¹²² This law covers a large range of recycling (not only food waste). However, like Vermont, it has largely been successful in reducing food waste. Part of this success has been driven by the initiatives that this goal has fostered. Their "five weapons for success" that Commission instills within its partners includes aggressive public policy, strong public-private sector partnership, efficient waste management system, economic incentive, and education. Mainly through public-private partnerships, they have been able to accomplish success in the food waste realm. Food Runners, extrafood.org, Peninsula food runners, White Pony Express, Food Shift, Urban Harvester, and Feeding forward are all San Francisco local organizations that capitalize of food waste and reallocate it to those who are food insecure.¹²³ The city level initiatives, especially the San Francisco Commission, and policies sparked a huge initiative within the city to be creative with their food waste. Because of the city's effort to intimately connect with their local community and tailor initiatives to fit the community, they were able to

¹²¹ Anne Poirot, "San Francisco's Race to Zero Waste Has One Last Major Hurdle," *Medium*, Sustainable Food Systems, 8 Mar. 2017, medium.com/sustainable-food-systems/san-franciscos-race-to-zero-waste-has-one-last-major-hurdle-6c76ca8f2f86; it is important to consider that while beneficial to food waste, laws like such could unequally fall burden on those who are experiencing poverty. Paying to throw something away can add up quickly and occupy an uneasy portion of a small budget.

¹²² Anne Poirot, "San Francisco's Race to Zero Waste Has One Last Major Hurdle," 2017, <https://medium.com/sustainable-food-systems/san-franciscos-race-to-zero-waste-has-one-last-major-hurdle-6c76ca8f2f86>.

¹²³ Sammy Blair et al., "59 Organizations Fighting Food Loss and Waste."

raise awareness of and address the American culture of waste. Meanwhile, they used the excess resources to address the issue of food insecurity.

Other initiatives across the country exist at an even smaller, community level. There is not necessarily a city or state recycling law to incentivize them. One near and dear example of a grassroots approach is the Campus Kitchen Project, which has a chapter here on Washington and Lee's campus through the Shepherd Program. Campus Kitchen collects leftovers from the Washington and Lee and Virginia Military Institute Dining Halls, close to "expired" goods from Wal-Mart, and produce from the campus garden. With these foods, they build meals. Some of the meals go to a Backpack Program that sends young children home on the weekends with a meal. Others go to elderly homes. The Shepherd Program has made a huge difference in food insecure areas of Rockbridge County, Virginia. Since 2006, they have recovered 424,526 pounds of food and provided 295,381 meals.¹²⁴ Speaking from personal experience, the Campus Kitchen Project has raised awareness of the issue of waste and food insecurity within its local community.

The Food Tank is a resource that details current, local initiatives that confront food waste. Here, I briefly describe a few of the creative initiatives they have listed.¹²⁵ Boulder Food Rescue in Boulder, Colorado helps businesses identify food waste that would otherwise have been thrown away. They divert the waste, via bicycle, to day shelters and food pantries." Additionally, for every \$1 donated to them, they donate \$18 worth of fresh fruits and vegetables to those who are in need of healthy foods.¹²⁶ They are involved in no-cost grocery programs and local arm produce rescue. They have diverted more than 1.2 million pounds of food from landfills to the food insecure people in Boulder. And, their success is multiplying; in 2016, they donated over 100,000 more pounds of food than the previous year (23% increase).¹²⁷ This organization's dynamic model provides holistic access of *fresh and healthy* foods to those in need.

City Harvest of New York, New York is the world's first *food rescue* organization, founded 1982. In 2017, they collected 55 million pounds of excess food from restaurants, grocers, bakeries, manufacturers, and farms. In their 22 refrigerated trucks, they delivered it free

¹²⁴ "Campus Kitchen at Washington and Lee," *Washington and Lee University*, 2017, <https://www.wlu.edu/shepherd-poverty-studies-program/community-engagement/campus-kitchen-at-washington-and-lee>.

¹²⁵ Sammy Blair et al., "59 Organizations Fighting Food Loss and Waste – Food Tank," *Food Tank*, January 09, 2017, accessed March 24, 2018, <https://foodtank.com/news/2016/07/fighting-food-loss-and-waste/>.

¹²⁶ <https://www.boulderfoodrescue.org>

¹²⁷ Sammy Blair et al., "59 Organizations Fighting Food Loss and Waste."

of charge to 500 community food programs across New York city.¹²⁸ They helped to feed up to 1.3 million New Yorkers that struggled to find food.¹²⁹ Similar to Boulder, they expand access to foods while reducing waste. This particular organization seems to help mitigate the current issue, but lacks an address of the deeper cultural roots.

DC Central Kitchen is a food distribution service based in Washington, D.C. that delivers free meals to homeless shelters, transitional homes, and nonprofit organizations. Last year, they helped to feed close to 1 million people.¹³⁰ Through a food recycling program, similar to that of Campus Kitchen, they turn leftovers and surplus food into nutritious meals for food insecure people in the D.C. area. In addition, they offer “culinary training for unemployed adults and healthy school lunches to low-income students in D.C.”¹³¹ While capitalizing on food waste, the program is especially adept to empower individuals out of poverty. For example, William, after years of suffering addiction and homelessness, completed the training program. He now has a full time job and an apartment.¹³² Through handling food and the cooking program, the individuals build closer ties to the food they consume

Food Forward in Los Angeles and Ventura, California is run by volunteers who rescue excess fruits and vegetables from private properties, public spaces, and farmers and wholesale markets and deliver the produce to “agencies that serve those in need.” Through private picks, (where groups can get together and harvest surplus produce) or youth service projects, Food Forward engages the community in their work. So far, the organization has rescued nearly 20 million pounds of produce.¹³³ This organization is especially great at reconnecting community members to the roots of the land—they cause which Berry is so close to—by incentivizing recovery participation in the actual farms.

Iskashitaa Refugee Network in Tucson, Arizona is a grassroots organization that focuses on the prevention and reallocation of food waste. In their harvesting program, refugees and volunteers learn “how to identify, access, harvest, use, and store locally grown produce, mostly from edible trees.” While providing food for the impoverished refugees, the program empowers the refugees with opportunities that allow them to “apply their knowledge and skills from their

¹²⁸ Sammy Blair et al., “59 Organizations Fighting Food Loss and Waste.”

¹²⁹ <https://www.cityharvest.org/programs/food-rescue/>

¹³⁰ <https://dcentralkitchen.org/annual-report-2016/>

¹³¹ Sammy Blair et al., “59 Organizations Fighting Food Loss and Waste.”

¹³² <https://dcentralkitchen.org/annual-report-2016/>

¹³³ Sammy Blair et al., “59 Organizations Fighting Food Loss and Waste.”

home countries.”¹³⁴ This organization beautifully incorporates issues of cross-cultural food differences, food security, and distance from the land. It educates its participants about produce, deepening their connection to the land and expands access to communities that are food insecure. Meanwhile, it pays close attention to the tricky and diverse nature of food, celebrating cultural differences.

Finally, L.A. Kitchen in Los Angeles is a non-profit that rescues healthy, local food waste and trains unemployed men and women to cook wholesome meals with this resource for the community. They collect “ugly” fruits and vegetables from local farms and companies that would not otherwise be sold. They anticipate reclaiming 1 million pounds of food in a year.¹³⁵ This organization focuses on the spread of the “Ugly Fruit Campaign,” promoting a culture that happily eats imperfectly shaped produce that better depicts the fruit that organically comes from the ground.

As demonstrated by program statistics, these local, grass-roots organizations have been quite impactful within their local communities. Those who start these organizations are intimately connected with the communities in which they begin their programs. They get to know the communities they are working with. They have face to face interactions with the farmers, and they have face to face interactions with those that they are serving. They *engage* the community with their donation infrastructure.

From this more intimate level of engagement, the communities also get to know the programs. They jump on the bandwagon. Consequently, the word is spread. More people volunteer in the gleaning afternoons on the farm in Tucson, more groups donate their food to D.C. Kitchen, more people bike to donate food in Boulder, more people are trained to cook wholesome meals from “food waste” in L.A. Then, they spread their cause and their new insight with their friends, in the same city or in other cities. The network continues to grow as education is fostered. These organizations that run on a community level more easily draw attention to a cause than a distant, federally run program. They help growth. When the end goal of these programs is to reduce and reallocate food waste, accordingly with the current food waste hierarchy, and when the goal is to push against a pervasive culture of abundance and waste, is this not the best way to reach the goal?

¹³⁴ Sammy Blair et al., “59 Organizations Fighting Food Loss and Waste.”

¹³⁵ Sammy Blair et al., “59 Organizations Fighting Food Loss and Waste.”

Perhaps it is an essential way, but these programs would not be nearly as efficient (or maybe even exist) if it were not for the federal, large scale policy. The liability laws protect the donors from fear of being sued. The tax policies incentivize the local programs to start-up. And, the national campaigns, especially those begun since 2015 have incentivized these local initiative to educate the public and provide resources for the most efficient ways to locally rescue and reallocate food. Often, funds are even allocated from federal or state funding. If the most recent bill to be introduced were to be passed, this protection and incentive would be even furthered.

Interestingly, none of the local programs found on the compilation of these success stories is located in the South-East. In the previous section, I argued that local initiatives might better reach small, rural, unique communities than the federal government. However, it does not seem as though the more grass-roots initiatives have broken into these communities. But, the South-East and rural locations where so much of the waste is being produced and the rates of food insecurity are so high. These areas are where the food deserts, and consequently the food insecure, are disproportionately represented. This disproportion is problematic and important to address. Perhaps, the local route is the way to go in these communities as I mentioned above—the people within the community know how to best attract followers of the movement. However, through outreach, perhaps federal programs can help expedite and incentivize this spread of the cause to these corners of the country, while providing the same strong basis that is already supplied for the existing companies. This effort would require greater resources, funds, and energy. However, it is necessary for *all* of the country to be aware of the issue. It is necessary if Americans are to steer away from their culture of abundance and waste and towards a culture with heightened awareness of the land and its scarce resources, with heightened awareness of privilege and gaps in access. It is a two-way street.

Conclusion on Initiatives:

After examining the costs and benefits of both the large scale, federal initiatives and the local, grassroots approaches, I conclude that one method is not more “efficient” than the other. Instead, they are best in tandem. Each relies on the other for continued, widespread, national success. The complex problem of food waste in the wake of food insecurity calls for complex solutions. My analysis resonates with others who have explored the relationship between different sectors of initiatives.

In “Values in the Trash: ethical aspects of food waste,” M. Gjerris and S. Gaiani argue for a “comprehensive approach” in an examination of the food waste case in Great Britain. The problem of food waste is similar, but the country in which it takes place is different and significantly smaller. They look at the “Love Food Hate Waste” campaign launched in 2007 by WRAP that involved retailers, brand owners, local authorities, businesses, community, campaign groups. They examine the “Courtauld Commitment” which capitalizes on resource efficiency at grocery, retail, and manufacturing level. Then, they examine the Waste Framework Directive under European Commission (2008) which required members to adopt waste prevention programs by December of 2013. This was a larger scale, federal (or continental program). She found the following:

The three cited initiatives demonstrate that a comprehensive approach— one that brings together the stakeholders of the food supply chain, combines private and public commitment to food waste production, meets best performances in terms of sustainability and raises awareness on all the issues and impacts connected to the food waste and resources— it is strongly needed to achieve the 50% reduction envisaged by the EU Commission by 2025.¹³⁶

The authors see the importance of the inter-woven nature of the three programs. They see the benefits that each brings to the table and the necessity of the sectors working together.

In “reviewing interventions to mitigate the effects of poverty and inequality on mental health in the United States,” Kristian Wahlbeck, Johanna Cresswell-Smith, Peija Haaramo, and Johannes Parkkonen conclude, “There are effective early interventions to promote mental health in vulnerable groups, but it is necessary to both initiate and facilitate a cross-sectoral approach, and to form partnerships between different government departments, civic society organizations and other stakeholders.”¹³⁷ The authors break the “sectors” into life-course level, household and working life level, community level, services level, and country level.¹³⁸ This topic of mental health, while still within the U.S., is vastly different that how food waste connects to poverty. However, it is interesting that the two have drawn similar conclusions—a multi-dimensional approach.

¹³⁶ M. Gjerris and S. Gaiani, “Values in the Trash: ethical aspects of food waste,” in *Envisioning a future without food waste and food poverty: societal challenges*, ed. by Leire-escajedo San-Ezifanio and Mertxe De Renobales Scheifler, 2015.

¹³⁷ Kristian Wahlbeck, Johanna Smith, and Johannes Parkkonen, “Interventions to Mitigate the Effects of Poverty and Inequality on Mental Health,” *Social Psychiatry and Psychiatric Epidemiology* 52, no. 5 (May 2017): <https://link.springer.com/article/10.1007/s00127-017-1370-4#citeas>, 50.

¹³⁸ Kristian Wahlbeck, et al, “Interventions to Mitigate the Effects of Poverty and Inequality on Mental Health,” 506.

Finally, ReFed, the organization that preformed extensive economic research specifically on food waste, offers a list of “stakeholders” that holistically cover the supply chain. Their research shows the benefits and necessities, monetary and societal, of reducing food waste at each level of the chain. These stakeholders include: consumers, entrepreneurs, farmers, federal government, foundations, investors, manufacturers, nonprofits/academia, restaurants/foodservice providers, grocery retailers, and state and local governments. The end goal, they argue, will not be accomplished without compliance at each level.¹³⁹

Thankfully, businesses, policymakers, farmers, researchers, and the funding and donor communities from across all scales are taking action to tackle food loss and food waste in the United States.¹⁴⁰ The issue of food rescue and reallocation has been addressed on an international, national, state, local, and community levels. Each sector has been absolutely essential in ensuring the steps necessary to tackle and reallocate food waste. The smaller-scale groups know the communities they are working with; they can specifically target the needs and cultures of their local communities. The larger sides are essential in protection, incentives, research, and accountability of the smaller organizations, often even providing funding. It is important that this multidimensional relationship is continuously developed and fostered in order to address the deep undercurrents and cultural roots of food waste in the long run.

Conclusions:

Wendell Berry lives peacefully on a farm with his family in Kentucky. Deeply connected to the land, emotionally and physically, he practices stewardship on his farm. He engages in a reciprocal relationship with his crops and land—taking no more than he can use, giving care and attention. He lives happily. Today, 61 million tons of food are wasted each year, while 15.5 million Americans experience food insecurity. The paradox is a social issue, and it partially derives from the culture of waste and abundance that permeates privileged American society. To the modern American that subscribes to this culture of waste, Berry’s lifestyle appears romantic. And perhaps it is. But, his lifeway offers this American an example of a value system that could apply to a modern lifestyle and might help to address the culture of waste and abundance that permeates the culture. This radical kind of cultural shift would attack the roots of the food waste,

¹³⁹ “Opportunities for Stakeholders to Act on Food Waste Reduction,” *ReFED / Rethink Food Waste*, 2018, <http://www.refed.com/stakeholders/>.

¹⁴⁰ ReFED, for example, is a collaboration of businesses, nonprofits, foundations, and government leaders that came together to analyze the problem of food waste and develop practical solutions. [Their report](#) highlights 27 of the most cost-effective ways to reduce food waste based on societal economic value, business profit potential, and other non-financial impacts.

food insecurity paradox. However, these movements take time and cannot be accomplished with the snap of a finger. Multi-level political and grassroots initiatives are essential to address of the paradox in the meantime and work towards cultural change. In the long run, we may not live on farms, subject to the success of our crops and the weather. But, in a city apartment, in a suburban home, in a mansion, or in a shack, we can respect and know our food. If we have this relationship with our food, perhaps we will waste less, and perhaps our food would be more equitably distributed.

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