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Wasting Plates: Addressing Food Waste in the United States

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Wasting Plates
Addressing Food Waste in the United States
Sarah Geuss

Environmental Policy
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Abstract

It is estimated that Americans waste over half of their food, depleting natural resources and destroying native ecosystems. Food is wasted daily through a variety of methods, whether through the picking practiced on farms, the selectivity of grocery stores for the best looking produce, and the over-consumption of food by consumers who are unaware of the effects of uneaten food. With the industrial revolution and the “eat more” agricultural tactics pushed post-WWII onto society, the American relationship with food has quickly declined. Urbanization has lent itself to the power of the food industry in transforming farming into another transnational economic production. To understand the effects of mass consumption and waste, it is necessary to consider the various factors affecting the way Americans eat. Food politics and agri-economics both play a vital role in controlling and manipulating the American diet. Consequently, readily available goods at increasingly lower prices now define the American food culture such that ethical food practices seem to have no place. However, there is now a push towards sustainable and civic agriculture, which poses as a solution that can help reduce food waste and increase environmental consciousness.

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Introduction: How Much Food is Wasted in the United States?

The United States wastes forty percent of its food each year. Food waste has now become a significant environmental concern, as wasted food symbolizes much more than an issue of eating. Environmentally, food waste incorporates various aspects of American life and traditions, including the way our nation's politics is intertwined with economic trends and social practices. Each of these three factors combined are resulting in environmental devastation, whether in the form of resource consumption, changing ecosystems, or the emission of harmful greenhouse gases into the atmosphere. What comes into question concerning food waste is, what can we do and what should we do about the way we approach food? How can we understand food waste as a socio-economic and political problem adding to the already evident destruction of the environment? After investigating the factors affecting food waste in each of the three areas of American society, it becomes increasingly evident that to combat current trends in the American food industry, it is necessary to establish a sustainable agricultural system that will promote local viability, both economically and politically, in addition to decreasing the threats facing our environment. Such a sustainable approach that focuses on the local has the potential of redefining what food symbolizes in the United States. Especially at a time when environmental issues are visibly at play, changing our relationship with food, and each of the factors tied to the production of food, will help establish a healthier understanding of the intricate and delicate workings of our planet.

Food waste is both a natural science and social science problem affecting the health of the environment. Food waste that ends up in landfills increases the emission of methane, a potent greenhouse gas, and represents the second source of human-related methane production and

emission¹. Economically, the average family of four will dispose between \$1,300 and \$2,200 worth of food, resulting in a national loss of \$160 billion annually². Impacting this figure is the American relationship with food. For instance, in 1900, 40% of the population lived on farms while, presently, roughly two percent of the American population does³. Partly due to the changing food industry, controlled by large multi-national corporations that have extensive power over local and national governmental decisions concerning food. Because of the loss of proximity to farms producing locally grown food coupled with transforming family traditions and a technologically-dependent culture, food has transitioned away from a socially significant part of the American identity to one so foreign many no longer know even the basics of cooking. As a result, loss of a food culture and separation from the environment we so depend on has created a significant strain on American lands.

Working to address food waste in the United States, sustainable and urban agriculture present us with plausible solutions for combatting food waste produced by the causal effects of monopolized food politics and agri-economics on the current trends of American food culture and ethics. Since the end of World War Two, food politics has changed as the food industry no longer interacts with individual farmers promoting food goods, but concerns the interactions between the American government with a globalized corporate industry, which is monopolizing all aspects of food production through the manipulation of the policymaking platform. This is apparent as fewer corporations control the vast majority of products entering the economy.⁴ Large monoculture factory-like farms have replaced the traditional American food system.⁵

¹ Jonathan Bloom, "Why food waste Matters," 29 Mar 2011. *Fresh the Movie*. 18 Mar 2013, <<http://www.freshthemovie.com>>.

² Ibid.

³ Marion Nestle, *Food Politics* (Los Angeles: University of California Press, 2007) 11.

⁴ Ibid.

⁵ Jonathan Bloom, *American Wasteland* (Cambridge: De Capo Press, 2011), 3.

These intense production ‘factories’ are a clear sign that food production is no longer a sustainable livelihood but rather a purely economic function.

While a select few transnational corporations are buying out small local farms, the American food consciousness is simultaneously changing, even disappearing. The disconnection of food from the farm to the plate has resulted in a national decrease in respect for food, leading to wasteful habits. The growth in available food products at supermarkets, along with the disassociation from the environment has created a society based on mass consumption. Such disconcert has further led to a decreased interest in animal rights, sustainable farming, and even climate change. Yet, as the food industry continues to control the entirety of the food industry and therefore food politics as well, there is a growing local movement concerned with the sustainability of food. It is unmistakable that a growing populous is becoming more aware of the problems associated with current food production trends such that sustainable and urban agricultural practices are seen as desirable and plausible alternatives to the fast-food industry. Taking New York City into consideration as an urban area in need of healthy food, the growth in food markets and establishment of urban gardens is helping the fight to dissolve some of the power of the food industry’s leading corporations.

Food Waste in the Past

While documented evidence regarding food waste habits in the past, before World War Two, are hard to come by, industrialization and the modernization of the food industry certainly redefined food in the American consciousness. It is most likely the case that early American settlers wasted little of their food as it was homegrown and distributed throughout the community. Leftover food products were most likely composted for soil richness or given to livestock as feed, rather than today in which livestock is given the majority of grains grown in

the United States. The concept of food waste as a socio-political and economic problem is a phenomenon of the twentieth and twenty-first centuries, with rapid industrialization and modernization of society in general. As we have seen, both World Wars catapulted the United States into a new stage of food production, with the growth of mechanized factories and decreased reliance on manpower. As a result, greater amounts of food were being produced to sustain a growing American population. Industrialization sparked greater consumerism, which increased national desire for new products that for the first time were being preserved, canned, and frozen. Foods were becoming processed to such a degree that food was redefining itself as an economic commodity rather than strictly a cultural and familial tradition.

A growing economy also meant growing wealth that could be used to buy new and enticing food products that previously were unaffordable. Increasing wealth along with a booming food industry also changed the way Americans dealt with waste. Rather than rationing food products, food was becoming abundant and far more caloric. For instance, meat prior to World War Two and even still in the 1950s was a delicacy as it was far more expensive. Now, buying meat and poultry is highly accessible and relatively cheap, compared with European markets where meat and poultry remain expensive. Because meat eventually became less expensive, more of the population could consume more of it and on a more frequent basis. For instance, it is estimated that poultry consumption increased “more than five fold – from 17 to 93 pounds per capita between 1909 and 2000.”⁶ Just from the 1970s to present, there has been a further shift in the food industry with corporate monopolization of agricultural lands and the introduction of large machinery in agricultural procedures. Thus, the industrialization of the food industry certainly resulted in changing diets and greater volumes of food waste.

⁶ “Nutrient Content of the U.S. Food Supply, 1909-2000,” *United States Department of Agriculture* (2004), 15 Feb 2015. 9. <<http://www.cnpp.usda.gov/publications/foodsupply/foodsupply1909-2000.pdf>>.

Food Politics

Food politics concerns the interactions between corporations, stakeholders, and government agencies/officials in providing and implementing food. In order to understand the impact of the food industry on American food politics, such as the creation of certain nutritional programs and policies, it is essential to first consider how the U.S. food system has changed with modernization. Farming has been a significant part of American history as early settlers relied on the land for food. While colonies had their own food systems, the first organized American agricultural-based policy was established on May 15, 1862⁷ when President Lincoln put forward the Agricultural Act which gave way to the U.S Department of Agriculture, a governmental agency that would provide” the general designs and duties of which shall be to acquire and to diffuse among the people of the United States useful information on subjects connected with agriculture in the most general and comprehensive sense of that word, and to procure, propagate, and distribute among the people new and valuable seeds and plants⁸”. Locally-based agricultural production carried on until the onset of the Industrial Revolution when the rural to urban migration of people began, drawing labor away from the field to the factory⁹. To ensure continual provision of food sources, new technologies were implemented. With further technological advancements came the requirement for less human labor as machinery was introduced in order to cut the costs of investors¹⁰. The World Wars, especially World War Two, and globalization changed the face of economics, as mass consumption became part of a new American society.

⁷“An Act to Establish a Department of Agriculture,” *United States Department of Agriculture*, 15 Feb 2013, <<http://www.nal.usda.gov/act-establish-department-agriculture>>.

⁸ Ibid.

⁹ Helena Norberg-Hodge, *Bringing the Food Economy Home* (London: Zed Books, 2002) 5.

¹⁰ Ibid, 5.

With companies slowly taking over the business of agriculture, the relationship between food and society changed as well. Where before food politics would have involved individual farmers, middlemen, sellers and buyers¹¹, corporate “agribusinesses”¹² took over those positions, limiting power to a select few. As a result, we have seen a drastic decrease in the number of farms in the United States, while those still operating have increased land size and production output beyond what the land has ever been capable of holding. Only a few companies, such as Pepsico, Tyson, and Nestle, presently control food production and processing in the United States and internationally. The power they hold and the influence these companies have on all aspects of food, including the way we eat, is no secret. What comes into question is just how the largest food corporations in the United States implement food policies that will ensure continual profit into the future.

Food politics as a branch of environmental politics, due to its connection to the health and viability of American lands and native species. As Wendell Berry states, food is “being used as an instrument of foreign political and economic speculation. This militarizing of food is the greatest threat so far raised against the farmland and the farm communities of this country.”¹³ Stemming from agricultural and social policies that have direct affects on American ecosystems, the abuse and overuse of our natural resources, land, plants, and animals is cause to speak of a type of agri-environmental political issue. In investigating food politics through an agri-environmental perspective, we are able to situate ourselves within a highly complex and controversial debate. Norman Miller in *Environmental Politics*, states that, “environmental issues as they have evolved by the early years of the 21st century embrace an incredible broad and

¹¹ Norberg-Hodge, 9.

¹² Ibid.

¹³ Wendell Berry, *The Unsettling of America Culture and Agriculture* (San Francisco: Sierra Club Books, 1996) 7.

diverse universe of phenomena, circumstances, and conditions. They reach into virtually every aspect of our lives.”¹⁴ Perhaps an even more applicable consideration of food politics as related to environmental politics is the fact that food and agricultural processes are directly tied to the “single, dominant environmental issue” of the twenty-first century.¹⁵ As Miller states, “global climate change and its related elements...have turned environmentalism on its head and given it a planetary dimension.”¹⁶

Food Industry Policy and Maneuvers

One motive for the provision of food policies in the United States food industry is to “convince people to *eat more* of their products or to eat their products instead of those of competitors.”¹⁷ Although the power behind the food industry remains within the hands of a select few, in order to ensure profit, these corporations must ensure that governmental agencies, in effect, promote policies that will help generate consumption, regardless of nutritional and ethical concerns. Prior to discussing methods of policy implementation, it should be noted that the U.S. food industry “accounts for 8% of the U.S. gross national product...and employs 12% of the country’s labor force.”¹⁸

¹⁴ Norman Miller, *Environmental Politics: Stakeholders, Interests, and Policymaking* (New York: Routledge, 2008) 7.

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ Marion Nestle, *Food Politics* (Los Angeles: University of California Press, 2007) 1.

¹⁸ *Ibid.*, 11.

Table 1: Top Ten Food Producing Companies 2012:¹⁹

Rank	Company	2011 Food Sales millions \$	2010 Food Sales millions \$	Total 2011 Company Sales millions \$
1	Pepsico Inc.	38,396	35,600	66,504
2	Tyson Foods Inc.	30,975	27,293	32,266
3	Nestle	26,200	29,600	94,000
4	Kraft Foods Inc.	25,171	29,524	54,365
5	Anheuser-Busch InBev	15,304	15,269	39,046
6	JBS USA	14,000	13,342	14,000
7	Dean Foods Co.	12,698	11,758	13,055
8	General Mills Inc.	12,464	12,005	16,658
9	Smithfield Foods Inc.	11,093	10,264	13,094
10	Mars Inc.	10,500	10,500	30,000

The top producers of food products in the United States hold an enormous power over food and beverage sales and, therefore, also have power over food politics. To encourage sales, efforts extend beyond advertising in order to ensure products continue to be bought and consumed. Because these food companies are also producing products that are not necessarily nutritious, maintaining governmental support is critical.

To promote goods among stakeholders, corporations must encourage a certain “eat more” mentality²⁰ that goes against much of the nutritional advice offered by specialists. Beyond advertising, which plays a critical role in promoting food products within society, companies constantly create new products that feed into the consumerist behaviors of the population. This has the adverse effect of creating consumerist behaviors that foment food waste. The creation of new agricultural policies through legislative procedures can be realized through the nature of American politics, including the role of lobbying and the judicial courts in the implementation,

¹⁹ “Food Processing: Top 100 Food and Beverage Companies,” *Food Processing*, 08 Apr 2013, <<http://www.foodprocessing.com/top100/index.html>>.

²⁰ Nestle, 21.

creation, or dissolution of food and agricultural policies. Of course, another transformation of the American political system that has emerged as a polarizing factor is the role of science in political and economic discussions.

The opposing relationship between science and politics has been one that has changed significantly over recent decades. Discussions of scientific evidence in American politics during the 1970s was largely supported by Democrats and Republicans alike. Over time, there has been growing division between parties, especially in response to global warming and climate change. With international talks of new economic and political policies to ward off the affects of global warming and climate change came strengthened resistance from large multinational corporations. Climate change has become highly politicized such that, in the United States, it became a matter of party membership. Within the American political sphere, climate change became a Democratic issue, supported by a liberal economic approach to social issues. Recently in American history of politics, while President Nixon and President Clinton pushed socio-economic initiatives that would promote environmental health through promotion of conservation, Presidents Reagan and Bush greatly disapproved, stimulating a Republican response that green initiatives were contrary to economic development. By the 2000s, climate change, and the reputation of science as a credible political force became subject to exorbitant criticism.

With an atmosphere of scientific dilemma, science as a justifiable factor of policy-making has turned into a debate. This helps explain how the food industry has been able to promote a certain food ethic that is contrary to a nutritious and healthy lifestyle. Marion Nestle in her work *Food Politics* examines how the food industry has changed the way Americans eat, regardless of the science. For instance, one reason for the dietary advancement of protein (in the

form of meat) as depicted by the food pyramid in the 1990s was in part because of a push by the meat industry. The food pyramid, which was taken to be an accurate and scientifically-based nutritional suggestion, has been greatly influenced by various individual food industries and their pursuit to create an economic demand for their product; “USDA was responding to meat and dairy producers complaining that the placement of their food groups in narrower, “eat less” sectors of the food pyramid caused their products to be “stigmatized.”²¹ What power should food industries have in such a scientific branch as nutrition? Should what matters count industry in general? Though it is not a new concept that industry players extend great control over consumer behavior and conceptions, it would seem that, in rejecting credible nutritional advice, the food industry is only providing false information, adding to the already blurry consumerist perception of what is healthy.

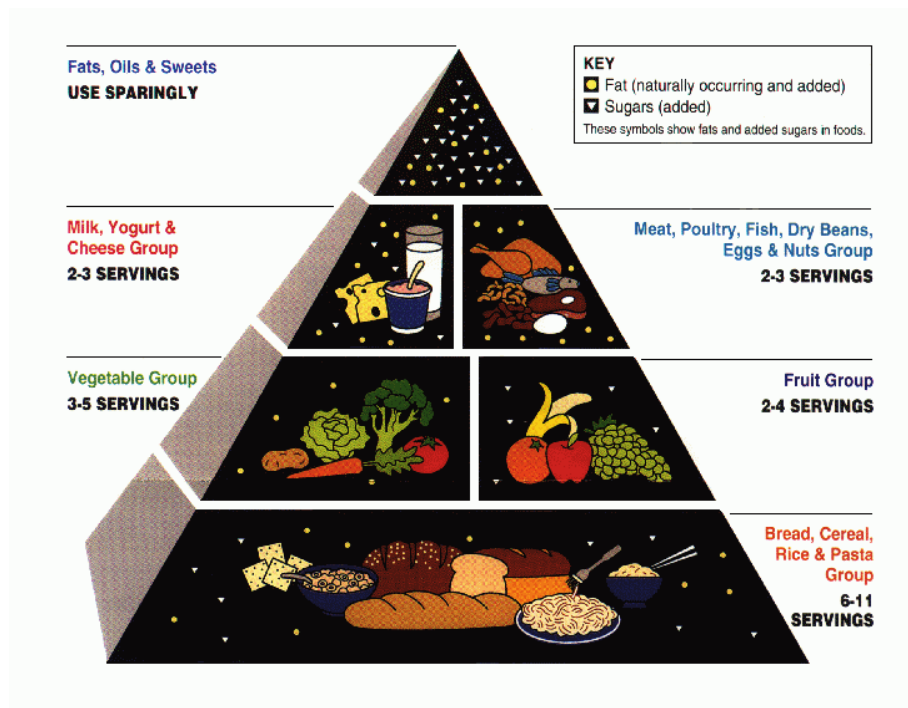


Figure 1: 1992 USDA Food Pyramid²²

²¹ Nestle, 52.

²² “1992 Food Guide Pyramid Graphic.” *Center for Nutrition Policy and Promotion*. United States Department of Agriculture. 08 May 2013. <<http://www.nal.usda.gov/fnic/Fpyr/pymid.gif>>.

Publication of the food pyramid in the early 90s was eventually released after substantial research and discussion amidst specialists²³. What gave science the upper hand was in part a result of public concern as media presented a situation in which industry lobbyists were overextending their power. The 1992 food pyramid ‘scandal’ provides an example in which food politics, more specifically lobbyists of the food industry, and science conflict over producing correct information readily available for the public. Most recently, the USDA disposed the food pyramid and adopted a new “My Plate” alternative, which is equally questionable in regard to recent nutritional advice concerning the consumption, again, of animal fats.

The United States Department of Agriculture and Lobbying

The United States Department of Agriculture plays an important role in establishing and implementing food policies that have a direct relationship with agricultural procedures, economic endeavors, and social considerations of food. With that said, the USDA is critical in the analysis of food politics as the governmental branch has become the center of action in terms of policy implementation. After its creation in 1862, the department concerned itself with government supported agricultural issues, for instance, the Homestead Act of 1862 in which public land was sold to those willing to farm it.²⁴ Though the USDA has and does enact conservation policies concerning land use and environmental issues, the changing face of the American political system has affected the methods used to push certain platforms towards policy creation, often on the side of agribusiness. In regard to the food industry, the USDA is an important factor in the implementation of food policies, as well as a mediating body between politics and food science. Because the USDA deals directly with national agricultural agendas, it is required to facilitate agricultural discussions between businesses, individuals, and the government. However, as we

²³ “1992 Food Guide Pyramid.”

²⁴ “Timeline,” *United States Department of Agriculture*, 20 Mar 2013, <<http://www.usda.gov/documents/timeline.pdf>>.

have seen with the food pyramid, it can be difficult to ensure that food policies reflect an equal balance between the food industry, scientific evidence, and environmental concern.

During the 1950s, farmers and food industry leaders established a close relationship with the USDA such that “the control exercised by producer groups over USDA and congressional actions was so complete that this ‘establishment’ virtually excluded the Secretary of Agriculture and even the President of the United States from any significant role in policy decisions.”²⁵ By the 1970s, due to higher consumer demands as well as the introduction of various new groups into agricultural discussion, agricultural lobbying grew drastically.²⁶ From the period post-World War Two which introduced a new type of consumerist model, to the late 1970s, agricultural lobbyists were numerous and powerful; “a 1977 study identified 612 individuals and 460 groups” focused on food and nutritional issues.²⁷ By the 1990s, these numbers skyrocketed. The presence of lobbyists within food and agricultural matters is significant as they push the positions of individual industries onto policy platforms by influencing individual governmental agency members. The relationship and movement of lobbyists into governmental positions further allows food industries to infiltrate different socio-political agendas. As Nestle notes, “in 1968...at least 23 former senators and 90 former representatives had registered as lobbyists for private organizations.”²⁸ Because previous members of governmental bodies become lobbyists, the means by which they are able to exert the power of the particular industry is heightened. To illustrate this, lobbyists with governmental backgrounds have the means to influence current governmental members through previous governmental connections. As a result, an issue pushed by a lobbyist will be more likely to be considered during policy reform meetings.

²⁵Nestle, 98.

²⁶Ibid, 98.

²⁷Ibid, 99.

²⁸Ibid, 99.

More recently, the 2001 administration appointed a previous lobbyist for the National Cattleman's Beef Association as the "chief of staff" to the Secretary of Agriculture.²⁹ While the USDA's mission statement is to "provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues *based on sound public policy, the best available science, and efficient management,*"³⁰ it seems rather counter-productive to appoint members of particular food industries (not to mention large and powerful industries) to positions in which it should be necessary to take on a rather neutral perspective. By electing individuals such as previous lobbyists for National Cattleman's Beef Association, a very particular and focused perspective on agricultural issues will be at play. Especially in a time when environmental issues should take precedent over certain other issues, principally when discussing agri-economic issues, it would seem that USDA should focus on limiting the influence of corporate power within socio-political deliberations.

Past the presence of lobbyists within governmental bodies, lobbyists have the advantage over other players in political debates as they are usually supported by large sums of money. During the 1999-2001 election, agricultural lobbyists, representing large corporations, contributed "\$4.3 million to federal candidates."³¹ In the past 2012 election, the contributions to candidates by agricultural producers such as the American Farm Bureau, Monsanto, and Archer Daniels Midland, totaled over \$13 million dollars³². The overall contribution total from the agribusiness sector (including crops, livestock, and tobacco industries) was over \$89 million.³³ The monetary

²⁹ Nestle, 100.

³⁰ "Mission Statement," *United States Department of Agriculture*, 08 Feb 2013, <http://www.usda.gov/wps/portal/usda/usdahome?navid=MISSION_STATEMENT>.

³¹ Nestle, 103.

³² "Crop Production and Basic Processing Top Contributors to Federal Candidates, Parties, and Outside Groups," *Open Secrets*, 05 Feb 2013, <<http://www.opensecrets.org/industries/contrib.php?ind=A01++>>.

³³ "Agribusiness: Top Contributors to Federal Candidates, Parties and Outside Groups," *Open Secrets*, 10 Feb 2013, <<http://www.opensecrets.org/industries/contrib.php?ind=A>>.

contributions given to candidates plays an important role in ensuring that certain agendas are pressed, such that it is more likely than not that agricultural producers will have the upper hand in agricultural policy reforms. Yet, while this is true, environmental groups and other smaller advocacy institutions have the advantage of the courts. Though producer groups have the advantage of governmental association, environmental advocacy groups such as the Sierra Club, are able to use judicial courts in promoting their agenda platforms.

Monsanto – Politics Before the Environment

The use of lobbying in political initiatives exemplified by Monsanto, and the company's place within governmental discussions of agricultural production policies. Monsanto, established in 1901, first started as a saccharin production company,³⁴ prior to producing fertilizers in the 1940s and the biotechnological seed industry in the late 1970s.³⁵ While the company claims to strive to improve crop success through sustainable practices, the company has become a notorious agribusiness giant that controls over ninety percent of soybean production,³⁶ such that their so-called sustainable roots become questionable. Philip H. Howard in his article "Visualizing Consolidation in the Global Seed Industry: 2006-2008," wrote that the consolidation of seed production power among a select few companies, "is associated with impacts that constrain the opportunities for renewable agriculture, such as reductions in seed limits and a declining prevalence of seed saving."³⁷ The replacement of naturally viable seeds

³⁴ "Monsanto History," *Monsanto*. 07 Apr 2013, <<http://www.monsanto.com/whoweare/Pages/monsanto-history.aspx>>.

³⁵ *Ibid*.

³⁶ "Revealed: How Seed Market is Controlled By Monsanto, Syngenta, Bayer, Dow, Dupont," 07 Oct 2010, *The Ecologist*. 07 Apr 2013, <http://www.theecologist.org/News/news_round_up/625294/revealed_how_seed_market_is_controlled_by_monsanto_syngenta_bayer_dow_dupont.html>.

³⁷ Philip H. Howard, "Visualizing Consolidation in the Global Seed Industry: 1996-2008," *Sustainability* (2009):1274.

with genetically modified species has numerous environmental impact concerns and defines the current agribusiness atmosphere in the United States, and transnationally.

Various issues are at work regarding Monsanto's control over agribusiness, in addition to politics. One aspect that must be studied is Monsanto's patent technologies,³⁸ which has enabled the company to increase their control of seed dispersal and use on American farmlands. In order to remain on top of the food industry game, Monsanto has been able to acquire other agricultural and biotechnological businesses, such as Delta & Pine Land, Cargill's International Seed Division, and Holden's Foundation Seeds, all for a price of \$4.5 billion dollars.³⁹ As Howard suggests, Monsanto's consolidation of power, "may be assisted by governmental policies, particularly when economic power translates into political power: larger firms are more successful at lobbying for government actions that result in an uneven playing field."⁴⁰ Clearly, with such a power extent over various industries, Monsanto with such an economic monopoly is able to extend its control into the political sphere, for the worse.

Food politics represents the means by which the food industry consolidates power over agricultural production and allows the industry to influence consumer habits. Because of the nature of American agricultural policies, namely industry subsidies, corporate agribusinesses are able to further the extent of their control over American food production. Consumers are left with little alternative choices. In regard to sustainable agriculture, it is apparent that in order to promote sustainable and organic food production, it is critical that the American population takes an increasingly active role in determining the means by which the nation is run altogether.

³⁸ Howard, 1275.

³⁹ Ibid, 1270.

⁴⁰ Ibid.

Sustainable agriculture may not have the inherent governmental support, but like David and Goliath, it is never impossible to change the political structure of the food industry.

Agricultural Economics

As of 2010, it was estimated that over 590 billion pounds of food was produced annually in the United States.⁴¹ Taking into account that 40 percent is wasted, this would mean that the average American wastes up to 197 pounds annually.⁴² These figures only reflect the waste produced by individuals through over consumption of food products and the inability to identify freshness. However, it is also necessary to consider the food wasted through industrial processes separate from natural conditions. For instance, in discussing food waste Jonathan Bloom in *American Wasteland* notes the difference between manmade waste and what he calls “food loss.”⁴³ Food loss, unlike food waste, results from unaccountable costs of severe weather, crop failure, and certain mechanical malfunctions including food spoilage.⁴⁴ On the other hand, food that is lost due to conscious human actions may be termed food waste which includes lost products in supermarkets that are damaged by customer handling, food that is gone unconsumed at home and food venues, and food that is left unpicked on farms due to picking procedures.

While it would seem that educating the American population about proper nutrition habits, and thus reduce the amount of food wasted, the problem of waste goes beyond the home kitchen. The food industry and the consumption of food may be thought of as a vicious cycle: corporations own food factories and farms that in turn ends up in supermarkets which are controlled by the same corporations. The foods that are then determined to be healthy for the

⁴¹ Bloom, *American Wasteland*, xi.

⁴² *Ibid*, xii.

⁴³ *Ibid*.

⁴⁴ *Ibid*.

average American are determined so in part by the federal agencies supported by those corporations. Thus, the food we decide to eat has essentially already been chosen for us such that by the time we consume the food. As a society, we actively purge of foods we do not finish nor know how to salvage, returning the cycle back to the farms.

Farms are a site of tremendous food waste. For instance, picking methods enforced by farms actively leaves a certain percentage of produce unpicked left to spoil rather than used elsewhere. Due to retailer desire for perfection, farming practices have become so selective as a means of ensuring happy consumers who, in reality, have little knowledge of what they are eating. For instance, Ocean Mist, which is a national producer of greens in California, Mexico, and Arizona,⁴⁵ harvests 97 to 98 percent of its crops.⁴⁶ However, as Bloom notes in his discussion of the company's harvest rates, "since growers in the Salinas Valley produced 153,495 acres of lettuce in 2007, that's the equivalent of not harvesting 15,350 acres, of leaving more than 13 million pounds of lettuce in the field."⁴⁷ So what of the food that is wasted, whether by individual Americans, farms, or supermarkets? For that, we must turn to the landfill.

Food waste is a massive environmental hazard. For one, the majority of food wasted ends up in landfills that cannot keep up with the increasing amounts of food added daily. While in nature, food will decompose, returning nutrients back to the soil,⁴⁸ because of the volumes of food being added to landfills daily, natural decomposition processes are inhibited. Rather than

⁴⁵ "Our History," *OceanMist Farms*. 10 Mar 2013, <<http://www.oceanmist.com/aboutus/ourhistory.aspx>>.

⁴⁶ Bloom, *American Wasteland*, 4.

⁴⁷ *Ibid*, 5.

⁴⁸ "What is Decomposition," *Michigan Environmental Education Curriculum*. 10 Mar 2013, <<http://techalive.mtu.edu/meec/module10/Decomposition.htm>>.

recycling nutrients for other purposes, food waste in landfills is turned into methane, a hazardous greenhouse gas with twenty-three times the global warming potential than that of CO₂.⁴⁹

Historical changes – from small family-run farms to monoculture factory lines

Many early American villages and communities were concentrated around the farm.

Members of families were each important in helping tend and raise both livestock and produce, providing food for the community. As a result, “the household, the community, and the economy were tightly bound up with one another.”⁵⁰ Unlike today’s agricultural economy, the profits made on the farm returned back to the farm and the village. Even between communities, the farm served as an important social and cultural center, uniting other close-by villages through trade.⁵¹

At the same time that the Industrial Revolution and globalization pulled hard-working human labor from the farms into factories, the American food culture shifted simultaneously. As more people have settled in urban areas, there has been an increasing disconnection from the environment, and therefore from food. The growth in product ignorance allows for corporations to continue their monopoly over all aspects of food – from production and harvesting procedures, to advertising and withholding nutritional information due to the ability to reign over both political and economical spheres. Consequently, consumers are “in no position to understand, let alone confront, agricultural abuses like depletion of contamination of public water supplies or the heavy use of antibiotics and hormones in meat and dairy operations.”⁵² Yet, prior to being able to consider new methods of evaluating food consumption in the United States, it is crucial to understand how American food habits have changed over time. The farm itself was drastically

⁴⁹ “Hey Mr. Green: How Much Global-Warming Methane from Food Waste?” 02 July 2011, *Sierra Club*. 07 Jan 2013, <<http://sierraclub.typepad.com/mrgreen/2011/07/how-much-global-warming-methane-from-food-waste.html>>.

⁵⁰ Thomas A Lyson, *Civic Agriculture* (Medford: Tufts University Press, 2004) 8.

⁵¹ *Ibid*, 9.

⁵² Norman Wirzba, *The Essential Agrarian Reader* (Kentucky: University Press of Kentucky, 2003), 13.

different than those mass-monoculture farms most abundant today. For instance, in 1870 the average family farm was less than seventy-five acres and would produce a range of products, from various fruits and vegetables, dairy products, and meats.⁵³ These products would likely end up in small, locally run family stores located close to the farm. The overall economy was local: run and supported by those within or in close proximity to the community.

With a growing American population and a need to efficiently provide nourishment, the U.S Department of Agriculture worked to establish a national agricultural plan that would boost agricultural productivity, simultaneously emphasizing technological and mechanical advancements that were taking place. To do so, economists in the early 1900s began to devise plans focused on “four economic factors of production: land, labor, capital and management/entrepreneurship.”⁵⁴ These early plans set up farms with the ability to produce an effective output while simultaneously moving the farm away from the local, household mentality to one based on regional economics. One major change that helped the initial push towards modernity was the introduction of the tractor. With the invention of the tractor came the beginning decline in family farms, which were slowly replaced by federally subsidized national farms.

Post-World War Two marked the beginning of the present consumerist social constructs brought about by the mass scientific efforts to create new products that would aid the war effort. For instance, the use of synthetic fertilizers on farms rose steeply after the war, changing the potential productivities of farm outputs. This so-called “chemical revolution”⁵⁵ permanently changed farming and marked a change in the American environmental consciousness. Hazardous chemicals such as DDT began polluting American soils and, consequently, crop yields increased

⁵³ Lyson, 9.

⁵⁴ Ibid, 17.

⁵⁵ Ibid, 20.

significantly.⁵⁶ Between 1950 and 1980, crop yields increased by 74.5 percent, while the acreage of farmland used began declining.⁵⁷ Table 2 shows the rapid changes of farming from 1910 to 1997. Looking at the numbers of farms alone, the United States lost over four million farms. Considering that the majority of farms run today are monoculture, focusing on one major agricultural product, this loss is significant. Additionally, the sudden spike in mechanical machinery, represented by tractor use, also took a toll on agricultural employment, as fewer people were required to aid in production and the general workings of the farm. While industrialization and modernization of agriculture were advertised as a new American venture, giving people a chance to a modern and urban life, the movement away from traditional farming lost an greater job opportunity.

Table 2: Changes in Structure of Agriculture from 1910 to 1997: Farms, Acres, Tractors, and Fertilizers⁵⁸

Year	Farms	Acres (1,000s)	Tractors	Fertilizer (tons)
1910	6,361,502	878,798	6,000	5,547
1920	6,448,343	955,884	540,488	7,176
1930	6,288,648	986,771	920,000	8,425
1940	6,096,799	1,060,852	1,545,000	8,656
1950	5,382,162	1,158,566	3,394,000	20,991
1960	3,962,520	1,175,646	4,770,000	25,400
1970	2,954,200	1,102,769	4,619,000	38,292
1980	2,432,510	1,038,855	4,775,000	50,368
1990	2,140,420	987,420	4,305,000	47,700
1997	2,191,360	953,500	3,936,000	55,000

Agricultural policies pushed during the 1970s reflect changes in the economics of farming. Controversial Secretary of the USDA, Earl Butz, campaigned agricultural policies that

⁵⁶ Lyson, 20.

⁵⁷ Ibid.

⁵⁸ Ibid, 21.

promoted rapid agricultural growth in the form of mass-production farming of soy and corn.⁵⁹ Butz, on the part of the USDA, pushed for a “Get Big or Get Out” agricultural policy in which farmers were encouraged to produce as much as they could as fast as they could⁶⁰ as a means of providing Butz’s desire for cheap food production. Butz represents the atmosphere of agricultural economics during the 1970s which paraded a sort of “fast food mentality”⁶¹ so different than America’s traditional farming scope. Butz who believed himself on the side of the American people and economy, promoted agricultural ideals that were in no way conservative in that many farmers faced falling prices in adapting to Butz’s policies. The “Get Big or Get Out” policy of the 1970s reflects the interactions between agricultural politics and economics, and the adverse affects it can have on the population. Butz, who stated that his agricultural philosophy was that, “agriculture and food policy should represent what people want and what is best for most people.”⁶² The agricultural policy Butz was promoting was what he called “full production”⁶³ through the use of all of America’s potentially tilled land. His desire for abundance that would feed “the globe,”⁶⁴ however, comes with its consequences.

With today’s stress on production, agriculture has become merely an economic device rather than a societal tradition. A consumer that “wants food to be as cheap as possible” matches this.⁶⁵ Of course, all this comes at a ecological price as consumers rarely take into consideration the harmful (and wasteful) practices that are being employed by corporate farms. But what of the people whose livelihoods depended on the land? It does not seem to matter. As Wendell Berry

⁵⁹ Tom Philpott, “A Reflection of the Lasting Legacy of 1970s USDA Secretary Earl Butz.” 08 May 2008. *Grist*. 08 May 2013. <<http://grist.org/article/the-butz-stops-here/>>.

⁶⁰ *Ibid*.

⁶¹ *Ibid*.

⁶² Earl L Butz, “An Emerging Market-Oriented Food and Agricultural Policy,” *Public Administration Review* (1976): 137.

⁶³ *Ibid*, 138.

⁶⁴ *Ibid*.

⁶⁵ Wendell Berry, *The Unsettling of America* (San Francisco, Sierra Club Books, 1996) 32.

states in *The Unsettling of America Culture and Agriculture*, American consumers are “willing to hear that ‘96 percent of America’s manpower is freed from food production’ – without asking what it may have been ‘freed’ *for*, or how many as a consequence have been ‘freed’ from employment of and kind.”⁶⁶ Modern farming not only plays a significant role in formulating a new American ecological consciousness, or perhaps better understood as *unconsciousness*, that also negates an entire labor force, and arguably a founding American tradition.

While the “Get Big or Get Out”⁶⁷ attitude of the U.S. Government towards modernizing America’s farmlands may not apply in 2013, there is no question that corporate farms acquire the majority of federal support. In 2000, for instance, the government supplied \$17 billion worth of farming subsidies yet, because the subsidy depends on acreage, ten percent of the largest farms received two-thirds of available funding.⁶⁸ Smaller, family-operated farms simply cannot compete. Such companies as Archer Daniels Midland, which made a profit of \$80,676.0 million in 2011,⁶⁹ were among those farms to receive subsidy. This is part due to the pressures put on small farmers to assimilate and become a sort of satellite farm for a larger corporation. Once a farmer partners with corporate industries, it becomes difficult to part ways. Corporate farmers receive all the necessary equipment from its corporate owner, quickly leading to debt. For instance, *Bringing the Food Economy Home* creates a hypothetical situation in which a farmer works for Cargill, identifying the means by which a corporation ensures cyclical production; “the farmer purchases a new tractor from a company owned by the Cargill Corporation and some irrigation equipment from a second Cargill subsidiary. He also needs seeds, chemical fertilizers, and feed for his livestock, all of which are purchased from still other Cargill subsidiaries. As

⁶⁶ Berry, 32.

⁶⁷ Ibid, 41.

⁶⁸ Norberg-Hodge, 8.

⁶⁹ “Archer Daniels Midland,” *CNN*, 06 Apr 2013, <<http://money.cnn.com/magazines/fortune/fortune500/2012/snapshots/36.html>>.

harvest time he brings his wheat to Cargill's milling operation..."⁷⁰ The process continues and, by the end of the year, the farmer is in substantial debt after buying corporate-provided sources.

Corporate power over agriculture is clear when analyzing the market production percentages according to ownership. In 2013, four of the largest food companies control 40-45% of the market.⁷¹ Breaking these numbers down according to livestock production, these companies control 82% of beef production, 85% of soybean production, 63% pork, and 53% of chicken production in the United States.⁷² Thus, there is no hiding the fact that the corporate ownership of the food industry has created an economic force that is difficult to remove or replace.

Economical costs

With the aims of producing as much as possible in as short a period of time as possible, there is no question that the farming techniques used today take a toll on the environment. The continual turnover of crops, the use of large tractors on the land, fertilizers, and pesticides are all contributing to the changing ecology of American lands. Some of the externalized costs of today's farming include topsoil loss, desertification, air pollution from livestock farming, water-pollution, and even "pesticide-induced cancer."⁷³

Water: Factory farming and intensive crop production takes a tremendous toll on American water resources. Farm uses in the United States consume ninety percent of water,⁷⁴ most of which is diverted to farming areas consequently depleting other lands of water. In order to raise livestock, water is used at an exorbitant rate; for instance, 15 tons of water is required for

⁷⁰ Lyson, 9.

⁷¹ "The Economic Cost of Food Monopolies," *Food and Water Watch* (2012): 2.15 Feb 2013. <
<http://www.foodandwaterwatch.org/factsheet/the-economic-cost-of-food-monopolies.>>

⁷² Ibid.

⁷³ Lyson, 6.

⁷⁴ Bloom, *American Wasteland*, 21.

just 2.2 pounds of red meat.⁷⁵ Seeing that in 2011, 92,582,400⁷⁶ cattle were reared on farms, the amount of water used to produce a surplus of meat is astonishing. However, there are further harms to water beyond overuse. Because of the fertilizers entering into soils and nearby water sources, water is prone to algal blooms⁷⁷ that are hazardous, polluting waters and killing living organisms that depend on the source. Manure also takes its toll on the environment. While local and small-production farming can use the manure for fertilization, intensive factory livestock production creates amounts of manure that cannot be properly maintained with (or are not considered as having harmful effects on the environment). For example, in 2011 an Illinois hog farm “spilled 200,000 gallons of manure into a creek, killing over 110,000 fish.”⁷⁸ Thus, not only are factory farms inconsiderate of the environmental impacts of farming practices, but also of the livestock as well. In the same report by the National Resource Defense Council, the overuse of antibiotics in livestock attributes to algal bloom creation which has “[contributed] to a ‘dead zone’ in the Gulf of Mexico where there’s not enough oxygen to support aquatic life. The dead zone fluctuates in size each year, extending a record 8,500 square miles during the summer of 2002 and stretching over 7,700 square miles during the summer of 2010”⁷⁹

Soil : In irrigating water and diverting natural water pathways in order to provide for farms, American soils are at risk. Besides loss of water, soil is depleted of natural minerals due to monoculture production.⁸⁰ The vulnerability of soils to nutrient loss is slowly taking a toll on land fertility. The overuse of pesticides and herbicides add to the changing chemistry of

⁷⁵ Bloom, *American Wasteland*, 21.

⁷⁶ “Beef Industry Statistics,” *Beef USA*. 13 Mar 2013, <<http://www.beefusa.org/beefindustrystatistics.aspx>>.

⁷⁷ Norberg-Hodge, 40.

⁷⁸ “Facts about Pollution from Livestock Farms,” *National Resources Defense Council*. 07 January 2013, <<http://www.nrdc.org/water/pollution/ffarms.asp>>.

⁷⁹ *Ibid*.

⁸⁰ “Industrial Livestock Production,” *GRACE Links*. 15 Mar 2013, <<http://www.gracelinks.org/859/industrial-livestock-production>>.

American soils such that the addition of nitrates and phosphates into the ground are increasing the acidity, preventing local plants from growth.⁸¹ It has been estimated that thirty to eighty percent of fertilizers enter into the surrounding environment,⁸² slowing changing the acidity of near-by soils. Furthermore, soil erosion is also a consequence of the abuse of land as grazing is further depleting fertility.

Energy and Oil Agriculture uses roughly ten percent of national energy,⁸³ in order to produce and transport food from farms to other retailers. Forty percent of food system energy is required to make fertilizers,⁸⁴ which, in turn, will be used to pollute the land. As a result, farming and the transportation of food (often averaging 1,500 miles for a single food product)⁸⁵ across the country is extracting resources compared to locally produced, bought and sold foods require far less energy and resources. Because the majority of food travels cross-country, the transportation of food requires large volumes of oil. Beyond that, it is estimated that 400 gallons of oil are required to feed one person annually, and considering that the average person is throwing out forty percent of their food, that adds up to a huge loss of nonrenewable resources.

Moreover, the overuse of national water and energy resources, agriculture has an enormous ecological footprint. For instance, using the all-American favorite cheeseburger as an example, much of American food products have an environmental deficit in regard to energy use and greenhouse gas emissions. It has been estimated that the average American will eat a minimum of fifty hamburgers per year, and up to 150.⁸⁶ While this seems, on the surface, an acceptable statistic, what is shocking is the effect eating a hamburger has on carbon emissions.

⁸¹ Bloom, 22.

⁸² Norberg-Hodge, 39.

⁸³ Bloom, 19.

⁸⁴ *Ibid*, 20.

⁸⁵ *Ibid*.

⁸⁶ Jamais Cascio, "The Cheeseburger Footprint," *Open the Future*. 18 Mar 2013. <http://www.openthefuture.com/cheeseburger_CF.html>.

For instance, the carbon dioxide footprint of a cheeseburger is calculated to be 766 grams of CO₂, even 3000 CO₂ depending on the sources used during production.⁸⁷ Applying this to the energy required to cook the cheeseburger, the overall carbon dioxide emissions of the burger is “somewhere between 1 kilogram and 3.5 kilograms of energy-based carbon dioxide emissions.”⁸⁸ Now, if we were to add the energy emissions released through the rearing of a cow used to make that cheeseburger, then we add “about 2.6 CO₂-equivalent kilograms of additional greenhouse gas emissions from methane.”⁸⁹ As a result, the actual carbon emissions of a cheeseburger are between 3.6 and 6.1 kilograms of energy-based carbon dioxide emissions. Annually, “that’s 540-915 kg of greenhouse gas per year for an average American's burger consumption.”⁹⁰ Besides the greenhouse gas emissions of producing a burger, we cannot forget that one pound of beef requires 1,857 gallons of water.⁹¹ A hamburger requires between 4,000 to 18,000 gallons of water⁹² for production, taking account of the various steps of production. And that is just the calculation for one cheeseburger-noshing American. Clearly, the energy and resources required to produce American food staples takes a tremendous toll on the environment.

Social Costs of the Industrialization of Food

There are a number of social costs of present-day agribusiness production. Farming as a source of income was lost with modernization and the introduction of modern technologies. Because of shortened crop production periods, farm labor does not offer a constant income. Farmers themselves reportedly make little annually, again because of the debt they take on in buying from corporate subsidiaries. Labor shortages, especially on harvesting farms, is becoming

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ Ibid.

⁹¹ “Beef,” *Waterprint*, 02 Apr 2013. <<http://waterprint.net/beef.html>

⁹² “How Much water does it take to grow a hamburger?” *USGS*. 02 Apr 2013. <http://ga2.er.usgs.gov/edu/activity-water-content.cfm>.

a greater concern for the viability to farms and contributes to farm waste. For instance, producers are increasingly having difficulty “attracting and retaining skilled harvest crews, which means many market-ready fruits and vegetables remain unharvested.”⁹³ This is in addition to the crops that are often left behind due to demands of food retailers for perfect looking, non-bruised produce, regardless of taste.

To deal with this shortage, many farmers are hiring illegal immigrants. It has been estimated that around 1.2 million undocumented laborers are employed on American farms.⁹⁴ Subjected to harsh work environments without benefits, protection, or even a wage above minimum, such conditions are just another component to the present-day agribusiness. While there have been attempts to change farming labor policies in order to protect workers, corporate farmers are often unwilling to comply, establishing yet again another economic cost. While it is contended that there is a labor shortage, it has been suggested that if there were an actual shortage, prices of produce would rise. Rather, it would appear that there is a “consistent cry from the farm lobby for policy makers to adopt policies aimed at lowering labor costs”⁹⁵

Other social costs of agricultural economics are food insecurity and malnutrition. Taking New York City as an example, while the amount of food is far beyond what it has been in the past, food insecurity remains a serious problem nationally and especially in urban areas. Originally, the reason supporting food industrialization was increasing food production while cutting costs in order to ensure every American had food on their plate. While food is available considering the amount we waste, it is disproportionately distributed between the wealthy and poor and add to the creation of food deserts. Food deserts occur when an area lacks access

⁹³ “Left-Out: An Investigation of the Causes and Quantities of Crop Shrink,” *National Resources Defense Fund*, 14 March 2013, <http://www.docs.nrdc.org/health/files/hea_12121201a.pdf>.

⁹⁴ Twilight Greenaway, “Can the Food Industry Kick its Cheap Labor Habit?” *Take Part*. 04 Feb 2013, <<http://www.takepart.com/article/2013/02/04/immigration-reform-and-farm-and-food-labor.html>>.

⁹⁵ *Ibid.*

supermarkets, green markets, bodegas or other common food venues.⁹⁶ Beyond lack of access to fresh foods, including fruits and vegetables, food deserts occur in low-income, ethnic neighborhoods. In New York City alone, it is estimated that 750,000 residents live in food deserts.⁹⁷ Neighborhoods such as those located in the South Bronx and Harlem, where obesity rates are higher than other parts of the city, lack the essential nutritional foods required for a healthy lifestyle. In the South Bronx, one of the more impoverished areas in New York City and nationally, one in four people struggles with obesity and seventeen percent have diabetes.⁹⁸ From a health perspective, this is astonishing considering that the average diabetes percentage for New York City is ten percent.⁹⁹

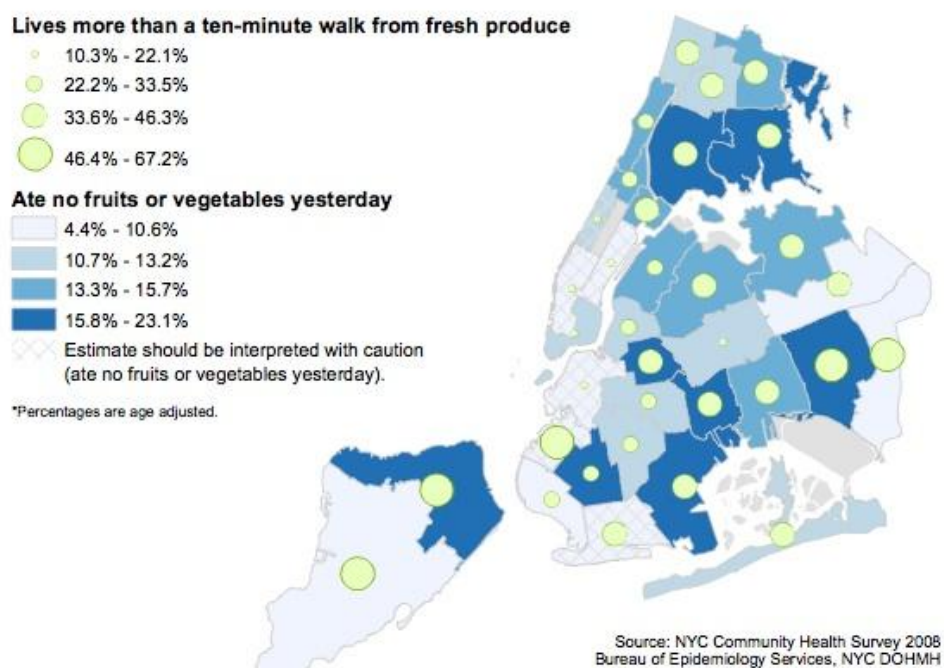


Figure 2: Availability of Fresh Produce Around New York City¹⁰⁰

⁹⁶ “Measuring Food Shortages in New York City’s Low-Income neighborhoods”, 697.

⁹⁷ “Food Deserts,” *Food Empowerment Project*. 18 Apr 2013

<http://www.foodispower.org/food_deserts.php>.

⁹⁸ “South Bronx Supermarket Shortage Leaves Minorities Starved for Healthy Food,” 2009. *NewsOne*. 03 May 2013. <<http://newsone.com/269697/south-bronx-supermarket-shortage-keeps-healthy-food-away-from-blacks-and-latinos/>>.

⁹⁹ *Ibid.*

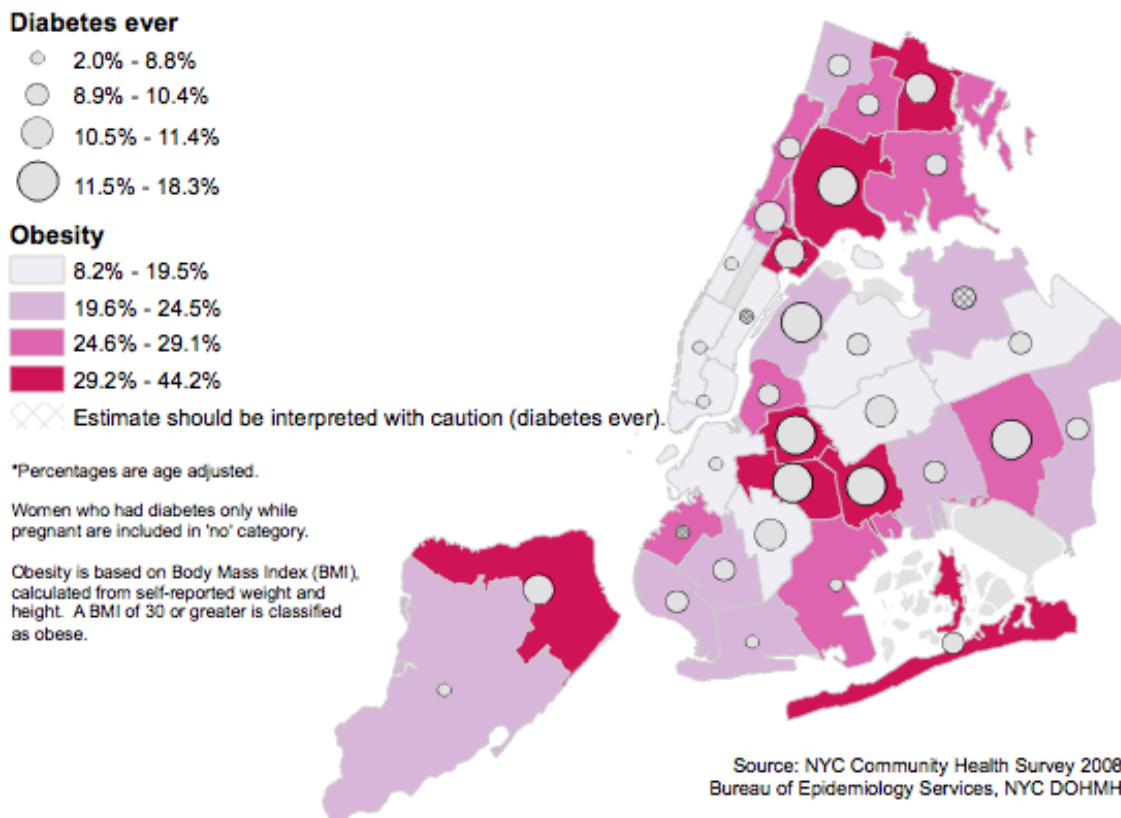


Figure 3: Diabetes and Obesity Rates in New York City¹⁰¹

Part of the reason attributed to this is that readily available foods in these areas are predominantly fast food restaurants and cheap processed foods. Food deserts do not only represent a food issue, but a socio-economic one. Because the median income of the South Bronx is \$8, 694,¹⁰² it is much harder to entice large supermarkets to build new locations in low-income areas where the potential profit margin is far lower than if the same company built elsewhere. This is the same for smaller food chains and bodegas. High costs of fresh fruits and

¹⁰⁰ “Fruit Vegetable,” 2008. *Bureau of Epidemiology Services*. 03 May 2013. <<http://umicheso.files.wordpress.com/2010/07/fv.jpg>>.

¹⁰¹ “Diabetes, Obesity,” 2008. *Bureau of Epidemiology Services*. 03 May 2013. <<http://umicheso.files.wordpress.com/2010/07/diabetes-obesity.png>>.

¹⁰² Arun Venugopal, “Census Pinpoint City’s Wealthiest, Poorest Neighborhoods.,” 2011. *WNYC*. 15 Mar 2013. <<http://www.wnyc.org/blogs/wnyc-news-blog/2011/dec/08/census-locates-citys-wealthiest-and-poorest-neighborhoods/>>.

vegetables make it increasingly difficult for these households to afford a healthy and nutritious lifestyle.

The existence of food deserts results from our current food industry, in which profits often result in overlooking the health of the nation in its entirety. Food availability in urban areas, such as New York City, exemplify the problems associated with high costs of healthy food alternatives. While green market stands are becoming more common in these neighborhoods, it remains an economic problem that must be addressed in order to combat the numerous food diseases associated with unhealthy food habits. Food deserts represent the inequalities that exist nationally and are one aspect of environmental injustice and racism. Environmental racism is a result of environmental issues that negatively effect minorities and low-income households. For instance, environmental degradation and pollution often occur highest near low-income areas whose populations are principally Hispanic and African-American. In regard to the food industry, populations living in poverty are often subjected to higher levels of water and air pollution. It is noted that the majority of North Carolina's pig farms are "disproportionately located in communities of color and regions of poverty."¹⁰³ Some of the environmental issues impacting these communities include polluted water due to manure and pesticide runoff, increased frequency of illness and skin irritations, and increased chemical intoxication. However, the environmental issues also become issues of injustice and racism because it is often the case that corporations believe that communities living in poverty cannot do anything about their living situation and therefore do not count in regard to company policies. Poorer communities are believed to have less political power and, because they do not contribute to the economy, their wellbeing is often overlooked. Because these communities lack the necessary support

¹⁰³“Environmental Racism,” *Food Empowerment Project*. 18 Apr 2013. <http://www.foodispower.org/environmental_racism.php>.

required for change, or even a voice, the overall situation of the proximity of poor communities to sites of intensified environmental destruction becomes a socio-economic issue that needs to be addressed. For instance, corporations must be held accountable for their actions and must give economic support to those they are subjecting to toxic lives. As a nation, we need to address the consequences of our current food industry in terms of its participation in creating inequality. Thus, environmental injustice and racism is a component of our nation's current food industry that harms the wellbeing of a great portion of our population, and must be addressed in order to combat both inequality and environmental decay.

Creating Waste From the Farm to the Supermarket

The existing trends in agribusiness economics, as well as consumerist desires for variety of utmost perfection, increase the amount of food Americans waste. Two components of food waste outside the individual consumerist's habits include picking methods on farms as well as methods of preservation along long transport distances. Aspects contributing to picking methods employed on farms, especially involving fruits and vegetables, are an immediate response to consumer desires, or perhaps what food retailers desire consumers to, in turn, desire. The dream of beautiful, larger than life fruits and vegetables has changed farming, and our conceptions of food, negatively. It is often the case the growers overplant in order to meet the needs of the market,¹⁰⁴ in order to meet demands regardless of food loss. Overplanting is problematic as the variability of market prices¹⁰⁵ is such that extra produce grown does not equate to greater profits therefore expanding the likelihood of food waste.

¹⁰⁴ Ibid.

¹⁰⁵ "Left-Out: An Investigation of Fruit and Vegetable Losses on the Farm," 2.

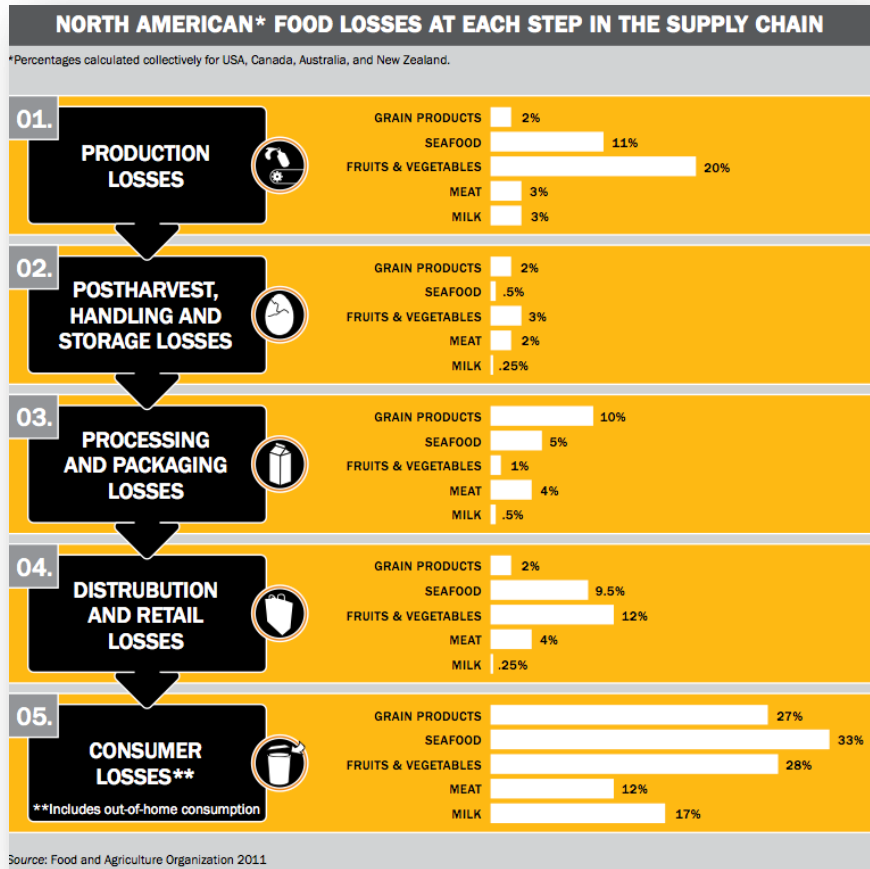


Figure 4: Food Loss in the Supply Chain¹⁰⁶

Other causes of food waste on the farm relate to product grading¹⁰⁷ in which fruits are graded according to particular traits. Because farms must meet contract demands, fruit that is edible that does not meet standards is left behind. The five grades given to fruits and vegetables are such that “it can often be a minute blemish, slightly irregular shape, or insufficient size by even a fraction that causes a product to be downgraded significantly.”¹⁰⁸ Related to lack of available labor and resources to pay for labor often lead to many fields not being harvested. To deal with

¹⁰⁶ “Left-Out, Crop Shrink,” 4.

¹⁰⁷ Ibid, 5.

¹⁰⁸ Ibid, 19.

time constraints, many harvesting crews simply “walk-by.”¹⁰⁹ This method requires a crewmember of farmer to literally walk-by crops to judge harvest potential. Of those harvests that require machinery for quick reaping, the loss of potential food products is no less. According to a study by the Food and Agriculture Organization, in 2011 during the production phase of food, 2% of grain products, 11% of seafood, 20% of fruits and vegetable, 3% of meat, and 3% of milk was wasted.¹¹⁰ It has been estimated that over a six-year average, “at least 97,000 acres (6 percent) of fruit and vegetable row crops were not harvested.”¹¹¹ While farmers cannot necessarily be certain of the crop yields of each year, such losses of potentially edible food, only adds to the growing need to restructure agricultural practices in order to adopt a more sustainably viable approach.

The potential costs of food waste can be exemplified in the case of broccoli, grown in Monterey County, California.¹¹² It is estimated that “if just five percent of U.S. broccoli production is not harvested, over 90 million pounds of broccoli are going uneaten.”¹¹³ Given that a projected 17 million American children are food insecure,¹¹⁴ it becomes questionable as to why we are not addressing such waste that can be easily used to prevent childhood and adult hunger. Past the economic waste of broccoli, such overproduction takes a toll on the environment. For instance, if five percent of broccoli grown in Monterey County goes unharvested, that is similar

¹⁰⁹ Bloom, 109.

¹¹⁰ Dana Gunders, “Wasted: How America is Losing Up to 40 Percent of its Food from Farm to Fork to Landfill,” *National Resources Defense Council* (2012). 04 Apr 2013, 4.

¹¹¹ *Ibid*, 8.

¹¹²“Crop Report 2009,” *Monterey Country Agricultural Commission*, 05 Mar 2013, <<http://ag.co.monterey.ca.us/assets/resources/assets/18/CropReport2009.pdf?1296154928>>.

¹¹³ “Left-Out: An Investigation of Fruit and Vegetable Losses on the Farm,” 3.

¹¹⁴“Shocking Need: American Kids Go Hungry,” 24 Aug 2011. *ABC News*. 04 Apr 2013. <http://abcnews.go.com/US/hunger_at_home/hunger-home-american-children-malnourished/story?id=14367230#.UWWU4zkIZSU>.

to wasting “1.6 billion gallons of water and 450,000 pounds of nitrogen fertilizer.”¹¹⁵ in addition to unnecessary waste of water and fertilizers, the energy required to produce the 5 percent uneaten, whether in the form of labor or energy sources, is nothing more than wasteful.

As is the case with walk-by methods used on some farms, packaging of foods also sorts products according to retailer standards and causes further avoidable waste. Because most food products must travel long distances cross-country for retail, improper transportation methods create food waste. Cooling techniques risk increasing food spoilage if products are not kept at proper temperatures.¹¹⁶ By the time foods arrive at their destination, it is often the case that on accepting deliveries, cases of produce are chosen sometimes by only looking at one particular piece.¹¹⁷ This has often been the case when choosing iceberg lettuce heads. Rather than check through entire products, shortcuts are used that lead to unnecessary food waste. Similar to losses during harvest and production, fruits and vegetables are often the victims of food waste. Estimated by the Food and Agriculture Organization, 12% of fruits and vegetables were wasted during distribution compared to milk (which has also been overly wasted) of which only 0.5% is wasted.¹¹⁸ Taking these two statistics into consideration, it would seem that proper handling is the reason for the loss of valuable and potential food. Furthermore, it should not be the case that retailers only accept what is considered perfect, only creates misconceptions regarding fresh produce. In promoting a particular perfection, consumer loses a sense of when some food is ready to be consumed, and how long that product will be good for.

¹¹⁵ “Left-out: An Investigation of Fruit,” 3.

¹¹⁶ “Left-Out: An Investigation of Fruit,” 9.

¹¹⁷ Bloom, 19.

¹¹⁸ Bloom, *American Wasteland*, 5.

In 2008, “in-store food losses...totaled an estimated 43 billion pounds...equivalent to 10 percent of the total food supply at the retail level.”¹¹⁹ Economically, this is the equivalent of a wasted \$15 billion each year.¹²⁰ Especially when studying factors leading to such an incomprehensible number, it would seem that retailers would attempt to change sales initiatives. Besides excessive picking by consumers, food wastes on the retail-level result from such aspects of the market as sell by/expiration dates. The growing divide between consumer and product contributes to, what can easily be prevented, food waste. For instance, once a sell by or expiration date is met, the product is often discarded from the floor.¹²¹ Although certain aspects of food waste during production, distribution, and retail stages of product ‘life’ cannot always be accounted for or predicted, economic habits that *result* in both excessive and avoidable food waste should be analyzed and changed. In the 2011 McKinsey report “Resource Revolution: Meeting the world’s energy, materials, food, and water needs,” reducing food waste is third of the top fifteen opportunities to increase resource productivity.¹²² To do so, sustainable economic production must be considered, along with the evolution of sustainably viable agricultural techniques, in order to combat food waste.

Sustainable Agricultural Economics

Transitioning away from the current globalized corporate food system with the goals of a more localized and sustainable agricultural framework, certain initiatives must be made to promote environmental wellbeing. Part of the question becomes, whether or not having a globalized food network is the most sustainable system to adopt? While this question goes into

¹¹⁹ Ibid, 10.

¹²⁰ Ibid.

¹²¹ “Dated and Wasted: The Expiration of Expiration Dates,” 19 Sept 2011. *Care2*. 16 Feb 2013. <<http://www.care2.com/greenliving/dated-and-wasted-the-expiration-of-expiration-dates.html>>.

¹²²“Resource Revolution: Meetings the World’s Energy, Materials, Food, and Water Needs,” *McKinsey* (2011): 18. 8 March 2013. <http://www.mckinsey.com/insights/energy_resources_materials/resource_revolution>.

matters beyond sustainable agriculture, nationally there must be emphasis on growth of local economies. Though this concept might be seen as stepping back in time, local economic growth has the potential of combatting food waste and promoting local independence of corporate ownership.

Prior to discussing the benefits of local-grown food compared with that of current intensive corporate-owned factory farming, there are perhaps obvious advantages to local food production. As we have seen, factors affecting food waste which are simultaneously depleting natural resources and increasing environmental damage include transportation of food products cross-country and the over use of national energy. Cutting long distance transportation would not only reduce gas consumption, but would also decrease the risk of food spoilage. By reducing distances which foods must travel, thus by keeping foods local, the necessity of certain pesticides and preservatives would become preventable. Additionally, it has been suggested that local food production, and the decreased reliance on transport would shift food availability to “a more equitable distribution of resources.”¹²³ Furthermore, the decrease in number of over-sized trucks traveling on national roads would decrease greenhouse gas emissions in the form of carbon dioxide, therefore cleaning up our roads, and our air.

Overuse of energy and natural resources in current agricultural methods could be reduced with local and sustainable agricultural initiatives. By promoting the growth of local farms through subsidizing policies, the exhaustion of energy will decrease. The oil and gas required to run large machinery would no longer be the case as the potential to use less energy through the potential employment of renewable resources are more possible with small-scale farming. While water in many cases must be irrigated away from naturally occurring sources in order to provide for enormous livestock farms, less is required for small-scale farms, and does not run the risk of

¹²³ Norberg-Hodge, 103.

pollution. Local, sustainable farming also has economic benefits that go beyond food and answer many of the costs of proper nutrition and animal ethics that are often ignored by corporate farming. For instance, dairy products collected from pasture-grown livestock “have less cholesterol, lower levels of acid-resistant *E.coli*, less fat, more essential omega-3 fatty acids, as well as higher levels of various anti-cancer agents, and more essential vitamins.”¹²⁴ Health cannot be ignored as a factor of economics as it is just one instance in which moving away from current agricultural trends would require fewer tax dollars.

Though some may argue that transiting away from large-scale food production might take a toll on the economy, there are various benefits to a local food system. Creating and promoting local farms will create more job opportunities for members of close by communities. Buying local produce, at such social events as farmers’ markets and through programs as community supported agriculture¹²⁵ (more commonly known as CSAs) will help endorse farmers, ensuring that there is a livelihood in producing at the small-scale. Economic benefits of programs as CSA include greater control of prices of certain food products, contrary to present trends of increasingly skyrocketing costs; through adoption of CSAs, “consumers guarantee the yearly production costs of the farmer through a shareholder fee.”¹²⁶ Additionally, farmers should be given greater incentives to donate extra crops to prevent waste; California, for instance, offers farmers tax credits for the donation of unused produce.¹²⁷ Food donation incentives in general should be given to businesses, whether small or large, so that unconsumed food is given to the

¹²⁴ Wirzba, 166

¹²⁵ Wirzba, 214.

¹²⁶ Ibid, 214.

¹²⁷ “Left-Out: An Investigation of Fruit and Vegetable Losses on the Farm,” 3.

14.9% of American families that are unable to provide enough food for their families.¹²⁸

Governmental aid in the provision of labor programs would also help decrease the volumes of edible food wasted, by assisting farms in establishing labor initiatives for individuals in the area that are out of work.

The American Food Culture and Food Ethics

The American food culture

With the changing face of the food industry, both politically and economically, came a changing American diet. Prior to large-scale corporate farming and World War Two, the American diet subsisted of seasonal crops and livestock. Relying on local farms and other food operations, Americans had limited access to certain goods such as sugars and butter, and had to ration throughout the year. However, with growing populations and greater means of food production, the American diet became “plentiful.”¹²⁹ Compared to today, the American diet resembled what many European diets still look like – less meat, more carbohydrates. While today, the majority of Americans consume meat regularly, prior to World War Two and intensive livestock farming, meat was still regarded a luxury.

Food has gradually become more scientific. Whereas before, Americans ate according to what was available locally, food technology introduced Americans to nutrition based on terms like “fats”, “carbohydrates,” and products that were now “fortified” and “enriched.”¹³⁰ In the 1950s, nutritionists began considering what it meant to have a healthy diet, and linking the growth of certain diseases to food. For instance, rising rates of heart disease was considered to be

¹²⁸ “Food Security Statistics,” *United States Department of Agriculture*. 9 Mar 2013. <<http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx#.UWWVPzkIJSU>>.

¹²⁹ “Food Security,” 2.

¹³⁰ *Ibid.*

a result of consumption of “fat and dietary cholesterol, much of which came from meat and dairy products.”¹³¹ Changing scientific perspective of nutrition changed social diets by introducing new methods of eating determined by what was considered “good or bad” to eat.¹³² However, as was previously stated, eventually the food industry became politicized in the 1970s such that dietary guidelines shifted, employing meat as a dietary necessity – protein heavy diets became popular.

The American diet once again changed as new models of health were provided by research. By the early 1980s, low-fat diets became the fad,¹³³ and suddenly the population took to “low-fat” foods only available through processing. This in turn allowed the food industry the ability to “offer a respectable rationale for creating and marketing all manner of new processed foods and permission for people to eat them.”¹³⁴ As Michael Pollan put it, “every course correction in nutritionist advice gives reason to write new diet books and articles, manufacture a new line of products, and eat a whole bunch of even more healthy new food products.”¹³⁵ Consequences for high-processed foods on health are now apparent as it is estimated that two-thirds of American adults are overweight or obese.¹³⁶ Meanwhile, 16.1 percent of the American population is food insecure.¹³⁷ Yet nearly 40% of our food is wasted. The current trends in American diets, including health issues such as hunger and obesity, question food waste. If 16.1 percent of the population is hungry (over 48 million people),¹³⁸ and two-thirds of the adults are

¹³¹ Michael Pollan, *In Defense of Food* (New York: Penguin Books, 2008) 23.

¹³² *Ibid.*, 37.

¹³³ *Ibid.*, 51

¹³⁴ Pollan, 52.

¹³⁵ *Ibid.*

¹³⁶ “Overweight and Obesity in the U.S,” *Food Research and Action Center*. 09 Mar 2013.

<<http://frac.org/initiatives/hunger-and-obesity/obesity-in-the-us/>>.

¹³⁷ “Map the Meal Gap,” *Feeding America*. 09 Mar 2013. <<http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx>>.

¹³⁸ *Ibid.*

indeed struggling with obesity, then it is obvious that the relationship between Americans and their food needs to change. To address these issues, economic and political initiatives should be made to ensure that the food products that go unharvested be used and redistributed to areas that need food.

Consumer Food Waste

The average family throws out “approximately 25 percent of the food and beverages they buy.”¹³⁹ Food waste within households is a result of factors including over-consumption habits, inability to reuse food products, lack of understanding of produce lifespan, and lack of concern. The lack of concern or awareness for what is bought is due in part to consumer’s separation from food. Without concern for where or how foods are produced before being sold in supermarkets, coupled with low costs of certain products, creates an attitude of little regard for what is later going to end up in the trash. After all, it is easy enough to find chicken thighs at \$1.99 per pound in New York City. Another factor attributed to household food waste is confusion over expiration dates and spoilage. Because supermarkets only sell produce that is considered to be grade-A, perfectly formed, many Americans are left clueless as to what signs of spoilage are. While bruises and slight imperfections should not be warning signs of decomposing matter, society is out of touch with food in general. Foods that should not be thrown out that are edible also end up in a trash bag. Spoilage at home occurs too often because of “improper or suboptimal storage, poor visibility in refrigerators, partially used ingredients, and misjudged food needs.”¹⁴⁰ It is clear that household food waste can be attributed to the nonexistence of food knowledge. Apart from fresh foods, items that are canned, in cartons, boxes, and plastic are given “expiration” or “sell-by” dates that further kitchen confusion. For instance, products such as milk

¹³⁹ Ibid.

¹⁴⁰ Bloom, *American Wasteland*, 12.

and eggs are often thrown out as soon as expiration date is met, regardless of actual state. Again going back to lack of information, consumers are inept at determining whether foods are spoiled or not.

Outside of the home, food is often wasted at restaurants and other food venues, and at schools. Aspects affecting food waste at food service venues often include portion size and over purchase by individual restaurants. Large portion sizes and a changing mentality that “doggy bags” are unnecessary result in equally unnecessary food waste. For instance, diners on average leave “17 percent of meals uneaten and 55 percent of these potential leftovers are not taken home.”¹⁴¹

Table 3: Comparison of Portions and Calories 20 Years Ago to Present Day¹⁴²

	<i>20 Years Ago</i>		<i>Today</i>	
	Portion	Calories	Portion	Calories
Bagel	3" diameter	140	6" diameter	350
Cheeseburger	1	333	1	590
Spaghetti w/meatballs	1 cup sauce 3 small meatballs	500	2 cups sauce 3 large meatballs	1,020
Soda	6.5 ounces	82	20 ounces	250
Blueberry muffin	1.5 ounces	210	5 ounces	500

Yet, consumers are not wholly to blame. Portion sizes today are estimated to be “two to eight times larger than USDA or FDA standard serving sizes.”¹⁴³ Besides what consumers leave behind, foods at food services have particular time limits in which foods can be sold and consumed. For instance, “McDonald’s fries must be thrown out after 7 minutes and burgers after

¹⁴¹ “Wasted,” 11.

¹⁴² “Portion Distortion and Serving Size.” *National Heart, Lung and Blood Institute*. 16 Apr 2013. <<http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/eat-right/distortion.htm>>.

¹⁴³ “Wasted”, 11.

20 minutes.”¹⁴⁴ Schools are another source of food waste as many children throw out school-provided foods without finishing. Factors that have been attributed to food waste include desired time at recess, dislike of the foods available, and lack of choice. In order to change student habits during school hours, it is essential to consider outside influences. As is the case with the general uninformed populous, most students neither are unaware of the harms of wasted foods, nor care about where their foods come from. This disconnection from food and nature causes many children to desire foods that are highly-processed and void of any nutritional value. As Wendell Berry puts so perfectly in his novel *The Unsettling of America*, “food is a cultural product; it cannot be produced by technology alone. Those agriculturalists who think of the problems of food produced solely in terms of technological innovation are oversimplifying both the practicalities of production and the network of meanings and values necessary to define, nurture, and preserve the practical motivations.”¹⁴⁵

National Nature and Food Deficit Disorder

There is no doubt that if we had a greater connection to our food sources that the American society would have a better understanding of food processes and the environmental costs of food waste. What is worrying is the sort of “nature-deficit disorder”¹⁴⁶ younger generations are facing as we as a society become increasingly technologically dependent. Compared to the 1950s and 60s when children spent more time outside, children today are enclosed within the house and though they may be aware of environmental issues such as global warming and climate change, “their physical contact, their intimacy with nature, is fading.”¹⁴⁷ While nature and the great outdoors once offered children the freedom to think for themselves

¹⁴⁴ Ibid, 12.

¹⁴⁵ Berry, 43.

¹⁴⁶ Richard Louv, *Last Child in the Woods* (Chapel Hill: Algonquin Books, 2008), 1.

¹⁴⁷ Ibid, 1.

and learn holistically, nature is now becoming synonymous with potential dangers, whether in the form of a bee sting or a broken leg. There are obvious advantages to a life outdoors; increasing time outside allows children the space they require to expend their energy, explore their capacities for creation, enjoy time with others and the environment, and to come to an understanding of the importance of nature's gifts. With a growing youth population struggling with attention disorders as ADHD and ADD, Louv suggests that nature, in its expansiveness, is like a sort of natural "Ritalin."¹⁴⁸ For instance, in a 2000 study on children with attentive disorders and the effectiveness of nature as a coping mechanism, it was found that "being close to nature...helps boost a child's attention span."¹⁴⁹ Thus, nature and the freedom to explore green space is critical to a child's intellectual growth, and is necessary in establishing a union between humanity and the natural world, which we could not live without.

One of the concerns of a separated life from nature is the mentality of humans as superior to nature, for which there are substantial implications. For instance, if the American population in general has a diminishing relationship with the earth, how is it possible for us to take a step towards sustainability that is necessary for our existence, or as Louv questions, "where will future stewards of nature come from?"¹⁵⁰ Green space and close proximity to our environment is necessary for our wellbeing, as for our planet's wellbeing. Further supporting the importance of a human-environmental relationship is the "biophilia hypothesis" suggests that it is part of the human need to have a "deep and intimate association with the natural environment."¹⁵¹ The hypothesis emphasizes the point that humanity has evolved alongside the environment and, as a result, we must embrace our ecosystem in order to preserve an innate factor of humanity.

¹⁴⁸ Ibid, 105.

¹⁴⁹ Ibid, 105.

¹⁵⁰ Louv, 146.

¹⁵¹ Steven R Kellert, *The Biophilia Hypothesis* (Washington D.C: Island Press, 1993) 21.

Providing environmental education is critical to childhood development and gives people the concern to care for how the earth is cared for. Applying this to food waste, environmental education is necessary if we, as a nation, are to combat food waste in order to promote greener and healthier living. If children are unable to appreciate the foods they eat, and the processes involved in food production, as a culture we will have difficulty moving towards sustainability.

Louv's concept of nature-deficit disorder has a direct consequence on what we eat and how we eat, and has led to what some have called food-deficit disorder, food illiteracy, and a national eating disorder. Each term expresses the same sad reality of the American-food relationship: we know nothing about what we are eating, we are food *illiterate*. It is apparent that our out-of-touch relationship with the environment has transplanted itself into our relationship with food, or lack of. Food illiteracy is also a direct result of the industrialization of food in which traditional cultural roles of foods have been replaced with ready to eat packaged and frozen alternatives. As Michal Pollan states in *The Omnivore's Dilemma*, "over the last several decades, mom lost much of her authority over the dinner menu, ceding it to scientists and food marketers,"¹⁵² resulting in a degradation in cultural food rituals. Food historically has been a uniting factor within societies and is tied to tradition, religion/spiritual practices that have enabled cultures to survive. However, the industrialization of food and the retranslation of food as strictly a commodity rather than a cultural element has redefined what food means. In the past, food products were picked according to seasonal availability or local farmer specialty while today, "the supermarket [has] become the only place to buy food."¹⁵³ As such, food is no longer chosen by the individuals preparing the family meal, but the economists and business analysts working together with company scientists to promote a particular new product. One consequence

¹⁵² Pollan, 3

¹⁵³ Ibid, 11.

of food industrialization is that no longer are we certain of what products should look or smell like. While “health depends heavily on knowing how to read...biological signals,”¹⁵⁴ genetic modification of almost everything prevents a once natural relationship from flourishing. A trick of the industry, this prevents Americans from trusting themselves, therefore placing confidence into the hands of those claiming to desire the improvement of health as a whole.

Beyond misunderstanding and appreciation for food in general, the current American food system has led to a paradoxical situation in which a large and growing portion of the population is overweight or obese and simultaneously starving. The “nutritionalism”¹⁵⁵ that corresponded with agricultural modernization created a slue of so-called nutritional information that resulted in an obsession with cutting particular components of food; “hyphens sprouted like dandelions in the supermarket aisles”¹⁵⁶ meanwhile Americans got fatter. Thus, while food was originally to blame for making people sick, the industrialization of food increased production while instantaneously depleting foods of any nutritional value.

Moving Towards a Sustainable Future

Environmental Justice and Sustainable Agriculture

In discussing food waste and agribusiness corporations, environmental equality plays a necessary part in creating awareness of the unethical harms of food production methods on both the environment and society.. Environmental justice, which is concerned with “the fair treatment and...involvement of all people regardless of race, color...or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and

¹⁵⁴ Ibid, 104.

¹⁵⁵ Ibid, 15.

¹⁵⁶ Pollan, 37.

policies.”¹⁵⁷ As a result, environmental justice “amounts to taking a stand in a partisan sense...it amounts to critically assessing alternative, developing an ethically defensible stance, and then defending it and amending it through open exchange.”¹⁵⁸ Environmental justice advocacy is important in ensuring that socio-political actions that have potentially devastating social and environmental results are debated, and possibly prevented. By emphasizing civic rights.¹⁵⁹ For instance, concerns that must be considered in relation to food waste include the evident weakness in the American food system in providing healthy foods at reasonable prices to all citizens, no matter what socio-economic background they are from. Labor conditions are a concern as well, as the reports of the abuse of underpaid undocumented workers is an issue. The ethical issues that are tied to food waste are not limited, and require a civic stand in order to perpetuate further awareness in order to acquire the necessary political and economical changes. In effect, environmental justice in addition to non-profit environmental organizations in general, is necessary if a sustainable future is to be considered.

Social Responsibility

A plentiful of steps can be taken by consumers to decrease and prevent food waste in the home. Similar to those solutions helping decrease waste from the production to retail stages, consumers have the advantage as they can create change. For instance, greater environmental education among the American population will help change consumer product expectations. By acknowledging that perfect food is an economic initiative to spark greater competition, grading

¹⁵⁷ “Environmental Justice,” *United States Environmental Protection Agency*. 15 Apr 2013.
<<http://www.epa.gov/environmentaljustice/>>.

¹⁵⁸ Kristin Schrader-Frechette, *Environmental Justice: Creating Equity, Reclaiming Democracy* (Oxford: Oxford university Press, 2002) 186.

¹⁵⁹ “A Short Course in Environmental Ethics,” *Santa Clara University*. 14 Apr 2013.
<http://www.scu.edu/ethics/practicing/focusareas/environmental_ethics/lesson5.html>.

systems will change such that the slightly bruised fruits left behind will begin to be eaten. Additionally, consumers should also donate, rather than throw out, edible foods to not only decrease waste but also to ensure that those households that cannot provide for themselves have better access to nutritional foods. By understanding the environmental harms of food transport systems, consumers might also begin to desire what is in season and local, over what is exotic and new. Environmental education is necessary in transforming consumer habits to promote sustainable communities that are healthier.

To begin to transform the American diet and eating habits, it is crucial to rethink the ethics of current agribusiness cultures in order to promote a more environmentally ideal local food system. As Gary Nabhan's novel suggests, we must "bring food home."¹⁶⁰ Creating a local food economy has the potential of greater local strength, whether economic, social, or environmental. By "reconnecting farm, food, and community,"¹⁶¹ communities will be able to provide the socio-economic structure required for success. By involving the local people in food production, the environmental issues of factory farming will decrease as less transportation, energy, and other resources will be required. Additionally, the labor necessary to help farms prosper will help local communities ensure livelihoods for all their citizens. Local green markets will provide greater social connection and create a friendly atmosphere. In doing so, a local and civic based sustainable agricultural program will "generate sufficient economic and political power to mute more socially and environmentally destructive manifestations of the global marketplace."¹⁶² GrowNYC, for instance, is a non-profit organization in New York City that emphasizes the importance of city-based environmental programs and is responsible for the promotion and existence of city-wide greenmarkets, urban gardens, recycling initiatives, and

¹⁶⁰ Nabhan, P. Gary.

¹⁶¹ Lyson, 103.

¹⁶² Lyson, 105.

educational provisions. GrowNYC currently organizes 54 greenmarkets during the week, which not only support family-operated farms and fisherman but also promote awareness of agricultural concerns.¹⁶³ One of the largest greenmarkets is the Union Square market held on Wednesdays and Saturdays, and provides a variety of organic produce, meats, and other food products such as grains and preserves. It is estimated that during peak season, the Union Square greenmarket attracts 60,000 shoppers a day,¹⁶⁴ the majority of who go for the food. In addition to food, the greenmarket provides other products including small eco-friendly household products and plants, and readily made foods.

GrowNYC provides New York residents with sustainable alternatives to larger food venues such as supermarkets and connects people directly with the vendor. As a result, residents are becoming more aware of the impact of the food industry while simultaneously supporting small-scale organic initiatives. Doing so is critical to changing the face and future of the food system as growing local support will help ensure family farms are able to gain a profit for their dedication to whole foods. Furthermore, GrowNYC is providing greater opportunities for areas without access to fresh produce and meat with the growth of markets in the Bronx, Harlem, Brooklyn and Queens. Many greenmarket locations now accept EBT; in 2011, the use of food stamps at greenmarkets surpassed \$630,000¹⁶⁵ demonstrating that low-income households benefit from local markets. As such, low-income households are able to gain from the markets as they can afford healthy alternatives to those available in their neighborhoods.

Case Study: National Wildlife Schoolyard Habitat Program

¹⁶³ “Greenmarket Farmers Markets,” *GrowNYC*. 06 May 2013. <<http://www.grownyc.org/greenmarket>>.

¹⁶⁴ “Why Buy Local?” *GrowNYC*. 06 May 2013.

<<http://www.grownyc.org/greenmarket/ourmarkets/whylocal>>.

¹⁶⁵ “EBT and More at Greenmarket,” *GrowNYC*. 06 May 2013.

<<http://www.grownyc.org/greenmarket/ebt>>.

Schools nationally are becoming more ecologically conscious with the help of the National Wildlife Foundations Schoolyard Habitat Movement, which helps create green spaces in schools for educational purposes. Founded in 1996, the National Wildlife Schoolyard Habitat Program aims to “reconnect today’s children with the outdoors,”¹⁶⁶ stressing the negative implications of the nature-deficit disorder discussed by Louv. To reconnect children to the environment, the Schoolyard Program assists educators in creating environmental class lessons that “use...school grounds as learning sites for wildlife conservation and cross-curricular learning,”¹⁶⁷ including education on natural habitats, energy conservation, ecosystems and an array of wildlife case studies. The benefits of the Schoolyard Program cannot be stressed enough, as it gives children the opportunity to learn and care for their environment and, as a result, establishes a relationship with the outdoors that aids in valuable personal growth. Not only does the Schoolyard program emphasize environmental education in children, but it also gives children who have attention difficulties a chance to gain hands-on experience, which can help promote the focus required for today’s classroom etiquette. The environment, or nature’s Ritalin, allows children more opportunity to use the creativity in order to grasp important educational lessons rather than sticking them indoors, which for many children, strains their ability to succeed. Taking into consideration that urban areas often lack outdoor space, New York City schools have taken to rooftop gardens in order to offer students who otherwise would not have the chance, the opportunity to connect with the environment.

Other urban opportunities for children and teens in New York City include the growth of student-maintained community gardens, such as Added Value, a non-profit organization “promoting the sustainable development of Red Hook by nurturing a new generation of young

¹⁶⁶ “Schoolyard Habitats.” *National Wildlife Federation*. 06 May 2013. <<http://www.nwf.org/How-to-Help/Garden-for-Wildlife/Schoolyard-Habitats.aspx>>.

¹⁶⁷ Ibid.

leaders.”¹⁶⁸ With an emphasis on green, hands-on education, youth leadership, and sustainable food systems, Added Value has trained 150 kids between the ages of 14 - 19 living in South Brooklyn to understand and maintain an urban farm. By connecting students with their food and giving them critical skills for both a healthy lifestyle and fruitful future, Added Value is changing the way children and teens in low-income areas think about their environment. In addition to the wealth of environmental education the participating students gain, Added Value has promoted the neighborhood economy by generating \$70,000 worth of youth stipends, and \$120,000 of local economic activity.¹⁶⁹ The farm currently grows 12 tons of fresh produce that is sold in local green markets as well as to local restaurants who participate in promoting the community garden’s existence. Thus, Added Value has become an important neighborhood initiatives that bring together people and businesses with the same desire to ensure bright futures for young generations.

School and community farm initiatives promote sustainable agriculture in that they strengthen the potential for a new food system. Considering the population of New York City, the existence of community farms, rooftop gardens, and school environmental programs strengthen the potential of the City as an example of how sustainable agriculture unites people and ensures a healthier lifestyle and environment which is becoming increasingly important for the future of our planet. While some might question the ability of a urban area such as New York City to produce enough food for it’s residents on a sustainable agriculture program, increasing the efficient use of what space we have to develop green food alternatives will extend the food yield. Additionally, if we as a nation become more educated in our food habits by also cutting

¹⁶⁸ “About Us: Overview and History,” *Added Value*. 04 May 2013. <<http://added-value.org/overview-of-added-value>>.

¹⁶⁹ “About Us: Accomplishments,” *Added Value*. 04 May 2013. <<http://added-value.org/accomplishments>>.

food waste, we will come to a better understanding of nutritional guidelines that will both combat food waste and food diseases. We do not eat what we have, so changing the way we think about our food will also change what we do with our food. By becoming environmentally conscious by promoting outdoor activity, it is possible to create a nutritionally strong food system.

Conclusion

Sustainable agricultural practices are essential in transitioning American society away from its current reliance on large multinational agribusinesses that produce foods in rapid time towards a more environmentally conscious practice. However, it is clear that to do so requires us to rethink the ways we interact with our government, with businesses, and others. Food waste poses a great threat to the environment due to the overconsumption of limited resources, destruction to natural ecosystems, and overall abuse of both land and animal. The political atmosphere among our government and transnational corporations is one based on the monopolization of power among a select few, such that American agrarian ethics are long gone. Economically, the present atmosphere of constant consumption results in the continuous need to satisfy consumerists and to ensure that competition continues. To do so, agribusinesses strive for pointless perfection of food products that stray away from what our natural environments are able to produce. Factory farm production, while allowing prices of foods to remain relatively low, are detrimental to the surround areas and do not necessarily produce what is healthy for our nation. Socially, we are becoming a society that wants whatever is fast and cheap, without taking into consideration the environmental impact of our actions, and of our desires. Food waste goes beyond a landfill problem and permeates into every part of the present standard American living.

What comes into question is, whether or not we as a nation are willing to make a stand for a healthier, happier lifestyle free of the lures of the capitalist market.

Combatting food waste thus requires reassessing political, economic, and social factors of current living, as well as a consideration of environmental education. It is evident that, at the base of everything, is a lack of understanding and consideration for the delicate nature of our ecosystems. With a society that favors technological advancement and greater market ventures, a social relationship with nature is almost non-existent. This is evident in the fact that most school children never eat the fruits and vegetables served during lunch, in part due to the lack of connection with the produce. Without a sense of a connection, our society is becoming increasingly resilient to environmental concerns, yet we now live in a world facing variable weather patterns such that climate change is a clear reason to start caring about our surroundings. To promote an environmental ethic that once existed in the American consciousness, it will be necessary to improve environmental education to combat the consequences of nature-deficit disorder as a means of moving towards sustainable development.

While it would seem that our nation is out of touch with our earth, there is a growing population that desires a more sustainable approach to agriculture. This is evident in the increasing number of green markets, whether rural or urban, as well as a growing emphasis on local, organically grown food. Such a refusal to accept the “fast food” nation confirms the growing need to redefine what food means within the American consciousness. From our roots in agrarian civic living, to what is now an urban jungle, evidence is showing that the traditional civic society has more to offer than just fresh food. Sustainable agriculture has the potential of reuniting communities, improving health and happiness, and ensuring future wellbeing of our families. While it would seem impossible to spark interest in an alternative socio-economic

structure, sustainable agriculture based on civic ethics will allow for greater innovation and creativity that defines the morals empowering the United States.

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