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Breaking Ground on New Agricultural Models: Industrial Agriculture and the Local Food Movement

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Breaking Ground on New Agricultural Models:
Industrial Agriculture and the Local Food Movement

Elizabeth Nealon

Abstract

This paper discusses and examines the longstanding issues surrounding industrial food production as it currently exists and the various ways that purpose-driven enterprises and environmentally-conscious consumers in the United States have been able to steer food production in a more sustainable direction. Over the course of the technological revolution, people living in metropolitan areas have become so distanced from farms and the processes of food production that many are ignorant of the realities of the food industry. Chapter 1 addresses these issues by presenting quantitative data that lays out a timeline of the evolution of the food and agriculture industry in America as well as data that contrasts industrial agriculture with more recent innovative agriculture models. Chapter 2 examines the history of American agriculture and food production in order to better understand the drastic differences between the more “traditional” models, what has become the norm within American industrial agriculture, and recent sustainability-focused models of agriculture. Chapter 3 approaches the food industry from an ethical perspective. Chapter 4 discusses the way in which the business of agriculture is affected by governmental policy, and how, in turn, the livelihoods of American farmers can become greatly dependent on certain government subsidy programs and lastly how people of lower socio-economic backgrounds are restricted in their food access. Chapter 5 addresses the propensity of average Americans to accept the norms of the new food industry whether they are ignorant of the problems surrounding the industry or they do not feel compelled to change it. Chapter 6 will offer suggestions about sustainable agriculture practices as well as potential policy changes that would promote more ethical agriculture practices.

Keywords: sustainability, local sourcing, agriculture, sustainable farming, factory farming, America, Agribusiness

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Introduction

At present, there are an overwhelming number of documentaries and informational videos on the evils of industrial agriculture, meat production, dairy farming, fishing practices, and so on and so forth. The trends of vegetarianism and veganism have exploded into movements and communities that, for different reasons, fight for better and more ethical means of food production. The words “local,” “free-range,” and “grass-fed” are plastered all over grocery store and consumers are being forced to choose between the most economical decision and the most ethical one. Food, now more than ever before, is being recognized as more than just a means of sustenance and nutrition. More than ever before, consumers are realizing the weight of their purchase power and are making efforts to consciously consume as seen in the inundation of the greenwashed food packaging in the average grocery store. Michael Pollan, author of *The Omnivore’s Dilemma*, attributes the desire for these labels to the first-person experience that most people lack when it comes to how our food is produced.¹ He says, “the organic label itself—like every other such label in the supermarket—is really just an imperfect substitute for direct observation of how a food is produced, a concession to the reality that most people in an industrial society haven’t the time or the inclination to follow their food back to the farm, a farm which today is apt to be, on average, fifteen hundred miles away” (Pollan 2016). This large distance that separates the average person from the land on which their food is produced is, somewhat obviously, not the natural order of things. Over the course of the last two and a half centuries, American farming has developed into a multi-billion-dollar industry, far from its beginnings as a method of efficient and controlled food acquisition. The evolution of agriculture to become the huge commercial industry that it is in the United States today was not a

¹ Pollan, Michael. *The Omnivore's Dilemma: A Natural History of Four Meals*. Penguin Press, 2016.

thoughtful progression. Instead it was often facilitated by profitable governmental policy and lucrative business deals prioritizing wealth above anything else. However, in more recent years with the growing awareness that consumers have, there has been a notable increase in the local food movement. Local food is part of a system of food production and marketing that typically occurs within a certain radius to the consumer or involves certain aspects of food production such as small family farms, urban farms, or farms that use sustainable practices.² This movement in particular is based in the sustainable ideology of reducing emissions from transporting the food as well as supporting local, often smaller farms and farmers, thereby helping the local economy and showing preference to these progressive models of agriculture.

This paper will explore the practices of the common food industry and juxtapose them with the practices of small scale, local agriculture. While there will be *some* mention of animal agriculture in the United States, the main focus of this paper will be cultivating agriculture. Chapter 1 will present quantitative data on the effects and practices of current large-scale industrial agriculture as well as small-scale and local agriculture efforts. Chapters 2-5 explore the historical, ethical, economic, and political aspects of both industrial and local agriculture. Chapter 5 explores a case study of a business that implemented local food sourcing and presents suggestions for potential agriculture policy changes. By focusing on the issues that are directly and indirectly created by industrial agriculture, it becomes easier to understand the Local Food Movement and how necessary these innovations are to promote global environmental health and human well-being.

² Johnson, Renée. "The Role of Local and Regional Food Systems in U.S. Farm Policy" in *Local Food Systems: Background, Federal Policies and Programs*, ed. Wagner, Tabitha. Agriculture Issues and Policies. New York: Nova Science Publishers, Inc, 2016.

Chapter 1: Taking Inventory of Current Agriculture Practices

In the late 1800s Americans were encouraged to move west and settle upon the frontier lands and many pioneers took advantage of this freedom. They sustained themselves with small farms of hardy vegetables and raising animals.³ By 1890, the U.S. Census showed that the frontier settlement era had come to an end, which began a period of more competitive business practices as these farmers started to use their farms for more than self-sustenance. At this point commercial farming was taking hold over America and farming was no longer about feeding one's own family, it was transforming into a marketable enterprise. In 1790, 90% of the labor force was farmers and over the course of the next many decades, the number would slowly decrease.⁴ By 1840, farmers constituted ~70% of the labor force and by 1900 this number had declined to 34%.

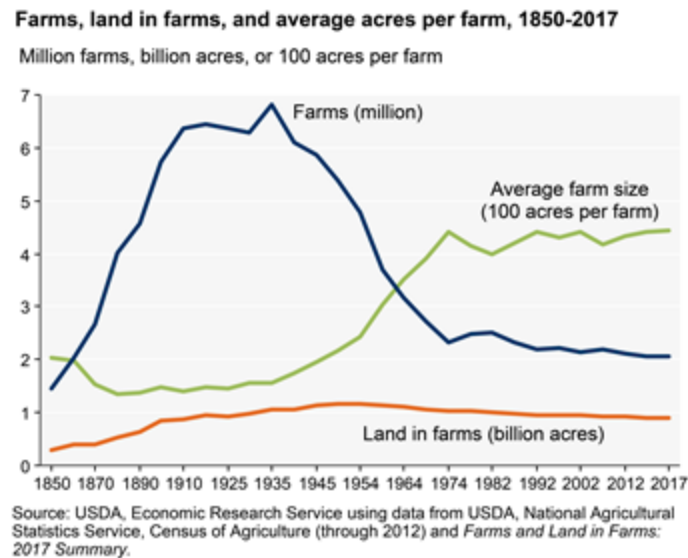
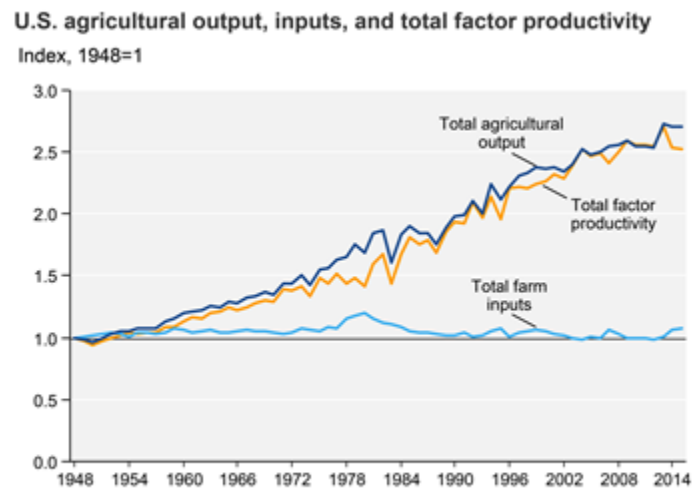


Figure 1.1

³ "A Condensed History of American Agriculture 1776-1999." *United States Department of Agriculture, USDA, 2000.*

⁴ Spielmaker, Debra, and Yasuko Mitsuoka. "Historical Timeline - Farmers & the Land." *National Agriculture in the Classroom*. 2018.

In 1935, the number of farms in America reached its peak at 6.8 million farms and was immediately succeeded by decades of drastic decline in the number of farms.⁵ During this time period, the nationwide acreage of farmland, as seen in figure 1.1, did not significantly change. By the 1970s, the number of farms leveled out and hovered at around 2.5 million. However, the nationwide productivity of farms did not reflect the decline in the number of farms. Instead, as farms became fewer and fewer nationwide, each individual farm simultaneously increased their own acreage and their productivity. Essentially, smaller farms were being absorbed to create a smaller number of large-acre farms. Between 1948 and 2015, the productivity of farms more



Source: USDA, Economic Research Service, *Agricultural Productivity in the U.S.* data series, as of October 2017.

Figure 1.2

than doubled.⁶ In this span of 67 years, American farm growing output was aided by the development of new technologies such as genetic engineering, chemical fertilizers, and agricultural machinery. However, the explosion of farm productivity did not benefit all farmers equally. Small farmers often could not keep up with the cost of acquiring these productivity-increasing technologies and were unable to compete against the farmers who had the means.

⁵ USDA, Economic Research Service using data from USDA, National Agriculture Statistics Service, Census of Agriculture (through 2012) and *Farms and Land in Farms: 2017 Summary*

⁶ USDA, Economic Research Service, *Agricultural Productivity in the U.S.* data series, as of October 2017.

As of 2017, only 19.3% of America's population live in rural areas meaning that a minority of the population produce almost all domestically grown crops, a stark difference from the 1870s when roughly 70% of the labor force was farmers.⁷ The sharp decrease in the number of farmers in the U.S. can be attributed to a number of factors, including, but not limited to, competition between farmers, harsh droughts, disputes between farmers and cattle ranchers, and the increase in factory jobs drawing more people into the cities and away from farms. Farmers comprise only 2% of the labor force today, a statistic that has been pretty consistent for the past 20 years, however, average farm size grew while the number of farms shrank.⁸ As previously discussed, technological advancements, governmental and economic policies, among other things allowed for this gradual shift from an abundant number of individually-owned small farms to much more productive, yet smaller number of large farms. This massive shift from the small family owned farms to much larger farms saw the acreage of the average farm grow from 155-acres in 1935 to 444-acres in 2017. It should be noted that 98% of farms in the U.S. today are family owned, "where the majority of the business is owned by the operator and individuals related to the operator," though these family-owned farms range greatly in income and size.⁹

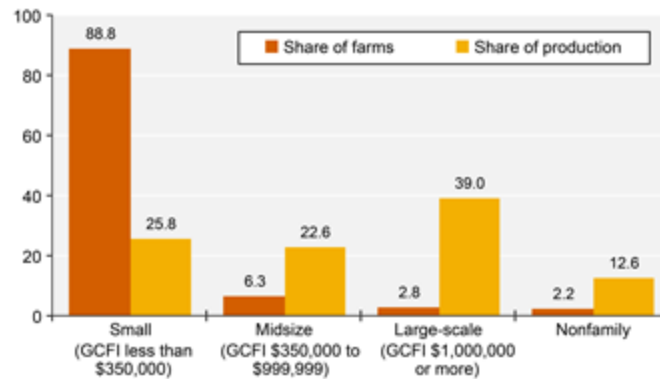
⁷ American Community Survey: 2011-2015.

⁸ "Employment in Agriculture (% of Total Employment) (Modeled ILO Estimate)." *The World Bank*, Sept. 2017.

⁹ USDA, Economic Research Service and National Agriculture Statistics Service, Agriculture Resource Management Survey. Data as of November 30, 2018.

Farms and their value of production by ERS farm type, 2017

Percent of U.S. farms or production



Note: GCFI refers to annual gross cash farm income before expenses; ERS refers to Economic Research Service. Nonfamily farms are those where neither the principal operator, nor individuals related to the operator, own a majority of the farm business. Source: USDA, Economic Research Service and National Agricultural Statistics Service, Agricultural Resource Management Survey. Data as of November 30, 2018.

Figure 1.3

The size of a farm (small, midsize, or large-scale) is determined by Gross Cash Farm Income (GCFI) which is comprised of cash receipts of crop sales, farm-related business, and government payments. Small farms are defined as having a GCFI less than \$350,000 per year and account for 89% of U.S. farms as of 2017. Midsize farms earn a GCFI between \$350,000 and \$999,999 and make up 6% of farms. Large-scale farms, those with a GCFI over \$1,000,000 account for only 3% of farms in the United States. These statistics alone would be heartening to those who champion American farmers and believe in the idyllic image of a traditional American farming family. However, further investigating paints a different picture.

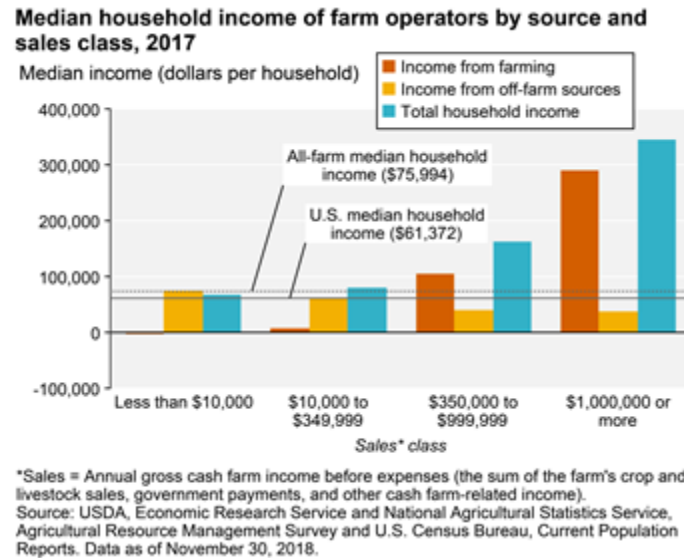


Figure 1.1

Though 89% of American farms are classified as small, they make up only 25.8% of production while midsize farms (6% of farms) make up 22.6% of farm production and large-scale (3% of farms) make up 39% of farm output.¹⁰ Nonfamily owned farms, comprising a measly 2% of American farms, contributed 12.6% to the U.S. farm production total in 2017. Beyond the unequal division of the number of farms to farm production contribution, there is also the issue of basing the data on the *Gross Cash Farm Income*. The “gross income” is calculated without considering the total cost of production which is money that the farmers will have had to spend in order to produce what is counted as the *gross*. For the entirety of U.S. farm production output, the production gross cost was about \$4.5 billion, and the production expenses were about \$3.6 billion¹¹. This leaves the net farm income at roughly \$850 million. Translating this large-scale interpretation of the difference between gross and net income in the agriculture industry, reveals how the small farms all across America do not actually yield enough farm income to thrive. In all of the small farms that comprise 89% of the nation’s total number of

¹⁰ USDA, Economic Research Service and National Agriculture Statistics Service, Agriculture Resource Management Survey. Data as of November 30, 2018.

¹¹ USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of August 30, 2019.

farms, more than half are considered “very small” which is defined as having annual sales under \$10,000.¹² These small farm households rely on other sources to make up the rest of their income. Similarly, in farms whose sales range from \$10,000 to \$349,999, the majority of income still comes from off-farm sources. It is not until we enter into the category of farms whose gross income is above \$350,000 do we see the ability to rely entirely on the farm’s output to fund the household. All farms influence the environment with their practices. However, the magnitude of the environmental impact that a farm possesses is relative to its size (according to its GCFI), how much physical land it operates, and the methods of farming that they use. Thus far, the discussion of hardships that farmers and the agriculture industry face has come from a capitalistic perspective. The focus has mainly been on the changes that have taken place in the American agriculture industry over the past century, but currently the food production industry is facing ecological threats that will greatly impact the future of agriculture on a global scale.

In 2001, the United Nations initiated a program called the Millennium Ecosystem Assessment, the objective of this program being “to assess the consequences of ecosystem change for human well-being and to establish the scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being”.¹³ Since a comprehensive inventory of the state of global ecosystems had never been done before, the increasing severity of issues facing humans in regard to the environment made the assessment a necessity. With this assessment, we are better equipped to understand not only the effects that human interference has had on our global ecosystem, but also the interconnectedness of the health of the global ecosystem and human well-being. The purpose of

¹² USDA, Economic Research Service and National Agriculture Statistics Service, Agricultural Resource Management Survey and U.S. Census Bureau, Current Population Reports. Data as of November 30, 2018.

¹³ Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

this assessment is for governments to be able to have a source of synthesized knowledge from many different fields ranging from scientific data sets to the shared spiritual and cultural knowledge of indigenous peoples. As a provisional ecosystem service, agriculture and food production was studied extensively in this assessment. The current commercial agriculture model affects the ecosystem in ways beyond the use of land for the purpose of farming or animal grazing. Because of commercial agriculture, water is often diverted from its natural path for field irrigation, the expansion of farm land area impedes on and reduces forest area, loss of forests leads to decrease in the natural process of carbon capture through photosynthesis, mass production of crops such as corn results in decreased biodiversity, etc. These immediate results of commercial agriculture can and often do have adverse secondary and tertiary effects on human well-being. For example, the great distances that conventionally grown food often travels in order to reach the marketing point releases great amounts of CO₂ into the atmosphere, leading to decreased air purity which impacts the health of humans and other organisms. Due to a lack of monitoring in the past, analyzing the compounded effects of the degradation of many ecosystem services had somewhat little information available as reference until the Millennium Ecosystem Assessment was ordered.

As stated above, we have data that traces the transition of the American labor force from one dominated by farmers, close to 90%, all the way to the current composition of the labor force, ~2% being documented agricultural workers. This drastic decrease of agriculture work in the labor force occurred simultaneously with the explosion of the human population, which suggests that an even greater amount of food is required to sustain us all. This decrease in agricultural labor while the population grew and need for food increased seems counterintuitive and yet, there must have been some innovation that facilitated American agriculture to sustain

the population. Somewhat obviously, we can find an answer in the revolutionary inventions and technology that streamlined farming practices and multiplied productivity and output of farms many times over. A vague outline of an industrial agricultural model can be seen in this description of a productive farm with the focus being on the total profit and a shift away from caring for the environment. Unfortunately, little deliberate consideration is given to maintain the land so that it can remain healthy enough to be cultivated year after year. The Millennium Assessment explains that the current mainstream agriculture model in the United States produces many negative environmental effects that potentially outweigh the positives. In America, most food is mass produced on great swaths of land which choke out biodiversity, is treated with chemical fertilizers which degrade fresh water supplies, then travels thousands of miles before it reaches the grocery store shelves and can be sold to consumers. One of the main issues with these practices have been the blindness or ignorance that Americans have or had to the realities of the agriculture industry.

Since 1997, there has been a continued decline in the number of farms in New York State from 38,264 farms in 1997 to 33,438 farms in 2017.¹⁴ However, the majority of farm output in New York is attributed to poultry, livestock, and like products (61%) and only 39% is attributed to crops. As of 2017, only 4% of all farms in New York State operate organically, meaning that out of 33,438 farms in the state, only 1,340 farms are USDA National Organic Program Certified. New York is not considered a large producer of crops to begin with and will most likely remain an importer of food, but the small number of organic farms allows for little divergence in the type of purchasing consumers can choose.¹⁵ With very few organic farms

¹⁴ 2017 Census of Agriculture. Volume 1, Geographic Area Series. Part 32, New York, State and County Data. [Washington, D.C.]: United States Department of Agriculture, National Agricultural Statistics Service, 2019.

¹⁵ Tufts study

available, the option to purchase locally grown, regional, and/or organic produce is diminished. Furthermore, the connection to the land that people, especially those living in urban areas, is similarly diminished by the low numbers of farms. A report done by the American Farmland Trust from 2007 stated that “farmland is being lost to development in New York at a rate of approximately 26,000 acres per year.”¹⁶ The threat to farmland posed by increased construction reflects the importance, or lack of, held by society to the food system. Fortunately, consumers have taken interest in the production methods of food in increasing numbers.

In recent decades, food has become more and more prominent in the consciousness of consumers and there has been an elevation of the importance of food in ordinary people’s minds leading to greater awareness of the practices of industrial agriculture. Due to the increased consumer awareness, many people have sought out alternative means of producing food. One manifestation of this care for how and where food is produced is known as the Local Food Movement. The Local Food Movement is, as the name denotes, a movement with goals to “minimize the distance between production and consumption, especially in relation to the modern mainstream food system.”¹⁷ The motivation behind this movement is to be able to produce food and purchase from farms that do not have to travel great distances to reach the ultimate consumers and to close the distance from farm to table. This mission, though not the only one promoted by the Local Food Movement, reduces the amount of carbon pollution from transportation, one of the greatest sources of pollution produced by agriculture. By purchasing food grown in a closer radius than comparable items available at the conventional market, a consumer not only benefits personally in knowing exactly where and how their food was

¹⁶ 3“Picking Up The Pace: A Road Map for Accelerating Farmland Protection in New York.” American Farmland Trust. January 2007.

¹⁷ Peters, C.J., et al. 2008. Foodshed Analysis and Its Relevance to Sustainability. *Renewable Agriculture and Food Systems*, 24, pp. 1-7.

produced, but they influence the agriculture market to reflect the consumer's preference for a more caring food system. This movement also seeks to economically support farms and farmers who seek to solve other issues that face agriculture today, such as the use of harmful chemicals or lack of biodiversity.

Chapter 2: Older Food is Better?

The Food System is a complex beast and so for the purposes of this paper, it is easiest to break the system down into two categories that encapsulate the two different, but general, aspects: the consumption side and the production side. Each is deeply dependent on and intertwined with the other, and it is impossible to analyze either side without considering the other. As with any capitalist market, without consumers producers would have no purpose; the work of producers is to satisfy the needs and desires of the consumers and the consumers drive the market based on their preferences and their purchasing trends and habits. Specifically, in the food system the consumers possess a great deal of power to influence the producers to follow specific practices, produce in certain manners (organically, non-GMO, etc.). In the wake of what Michael Pollan refers to as “a national eating disorder,” consumers have adjusted to the mindset that there is a right way to eat to be the healthiest version of themselves. America's cultural obsession with losing weight and following the newest diet that claims to reset your digestive track, break “bad” eating habits, or help you eat intuitively, one must ask the question of how we arrived at our current reality where food is no longer seen as our source of sustenance and nourishment but has been reduced to a market item. The question in the minds of consumers is usually “what do I want to eat?” and the answer will be based on the taste preferences.

Consumer preferences are constantly shifting to adjust to new food trends, such as the recent swing towards plant-based milks, and the acquisition of knowledge around food production practices.

Unless they are able to be entirely self-sufficient or rely on the charity of others for every meal, every single adult in America is a consumer within the food system and their purchasing power can drive producers, over time, to adjust to fit into the desires of the consumer. However, the change that results from the consumers' purchasing power takes place over extended periods of time unless there is a food scare where outcry about a specific bad practice taking place within the production industry. These instances of outcry usually surround practices that lead to poor health in those who consume the food as seen when customers of the Mexican food chain Chipotle were falling ill after eating contaminated meat. The concept of food being closely related to the health of the consumer is not altogether new, but it is definitely something that was discovered through scientific inquiry. Once it was scientifically established that food provided nutrients that would closely tie into an individual's wellness and health by scientists such as Eijkmann, Takaki, Pekelharing, Hopkins, Stepp, Funk and many others the task was then to notify the public about the interconnectedness of food consumption and potential deficiency-based illness.¹⁸ As society became more aware of the importance of food as more than a source of energy but as a source of vitamins and minerals that would prevent illness and keep them healthy. This mindset would eventually take on a new personality and fad diets began to pop up frequently and would be based in little or no scientific evidence. In the 1920s, a cigarette company would launch a campaign advertising that cigarettes would help with weight loss.¹⁹

¹⁸ Wilder, Russell M. "Fads, Fancies And Fallacies In Adult Diets." *Sigma Xi Quarterly* 26, no. 2 (1938): 73-87.

¹⁹ Lucky Strike. "Reach for a Lucky." Advertisement. 1930.

The 1950s saw the ridiculous Grapefruit Diet, also known as the Hollywood Diet, which was based on the idea that eating a grapefruit at every meal would encourage fat-burn²⁰. In the 1990s, juice, fasting, and detoxification diets were all the rage to achieve the stick-thin beauty standard of the time. Today, there is the social media peddlers of detox teas that claim to reduce fat in the stomach area but are actually just mild laxatives. The success that fad diets in general have in the consumer market are evidence of individuals' interest in what they are eating, but it also evidences that people try to use food in ways that will reflect on their external appearance but says little about people's interest in their internal health. However, it is impossible to generalize on the motivations of every person who participates in these diets. What is interesting though, is how some of these diets try to tie their questionable basis in the history of humanity and the way our bodies have evolved.

The questions that many of these trends attempt to provide an answer for is when exactly humans were eating the healthiest and most wholesome diets? Has humanity already peaked in our ability to eat a diet that best suits our lifestyles? Can we emulate the diets of our healthiest ancestors in order to become our healthiest self? Many of these diet trends tout what is healthiest based on what ingredients are consumed and how they are processed. These questions further shed light on the idea that the production methods of food sources impact the diets of the consumers. This understanding, whether it is understood consciously or unconsciously by consumers is reflected in the prevalence of certain fad diets and dietary styles such as the Paleo diet, non-GMO diet, eating organically grown vegetables, and the raw diet. The Paleolithic Diet is one of the more popular versions of these diets and is based on the idea that our ancestors from the paleolithic era ate balanced diets of meat, fats, and fibrous vegetables.²¹ This diet was eaten

²⁰ McCoy, Krish. "The Grapefruit Diet." Edited by Pat F. Bass, *EverydayHealth.com*, 16 Dec. 2009.

²¹ "What Is Paleo?" *The Paleo Way*, thepaleoway.com/what-is-paleo/.

in conjunction with a drastically more physically active lifestyle than the average person today engages in. The paleolithic era saw a people whose everyday goals were aimed at survival; hunting, foraging, tracking animals, etc. The paleolithic era was about 2.6 million years ago and since then human physiology has evolved, as has the foods they ate. It would be foolish to assume that the world we are currently living in and the food sources that we have had for the most recent centuries is honestly *that* similar to the resources available to our Paleolithic era ancestors. The Paleolithic Era is distinguishable for the arrival of stone tools, and is a time period during which hominins, humanity's ancestors, subsisted by hunting and gathering, and had yet to *thrive* as a society. This and other trends that seek to return to the "better" systems that existed in the past seem to be rooted in a societal idealization of the past rather than the reality.²² The hunting and foraging that was common practice before the agricultural revolution and the domestication of animals prevented settlements from becoming permanent because methods of food acquisition of food sources required movement. If a society was to survive, they had to be willing to follow their food sources and be willing to travel to find edible vegetation depending on the season. Once agriculture and domestication of animals became the norm, more advanced and permanent societies began to develop. This was a time when most groups had to operate daily in the pursuit of survival, different from our current society which allows for many people to have great amounts of leisure time. Our society operates with the understanding that each person has a purpose whether they be the law makers, the peace-keepers, the medical workers, or the food producers. There is an innate amount of trust that people who do these jobs are looking out for their fellow human.

²² Crowe, Julie A. Homchick, and Gregory Schneider-Bateman. "Paleomythologies: The Spiritual Persuasion of Evolution." *Poroi: An Interdisciplinary Journal of Rhetorical Analysis & Invention*, vol. 14, no. 1, July 2018, pp. 1–28.

Agriculture is said to be the story of human civilization, for without it settled civilizations would not have existed.²³ The technology that was developed to support agriculture was primitive, but it was integral to the domestication of plants and animals and probably would not be considered technology by today's standards. However, the innovations that allowed for agriculture to flourish throughout the world are diverse across region and continent. The dawn of agriculture is said to have begun in the fertile crescent where the weather was favorable, and goats, sheep, and cattle roamed freely before they were domesticated. Though other modes of agriculture developed independently throughout the world. The Incas used terrace farms, the water buffalo was domesticated in India, maize became a staple crop in the Americas, but the fertile crescent had a long head start and more advantageous combination of crops and animals than anywhere else in the world.

Over time, more permanent settlements began to develop facilitated by an explosion in trade. As trade became the foundation of many society's economy, people were able to acquire foods that might not have been grown within their community or even native to their region. They were able to sell the crops which were abundantly produced in their communities in exchange for goods that were not readily available within their communities. The use of trade in the food industry began as regional trade, but in the modern world a single grocery market will sell avocados from Mexico, strawberries from China, Asparagus from Peru, etc. In addition, the produce that is seen at grocery stores seems to be evergreen; it's so easy to forget that every fruit and vegetable has a specific growing and harvesting season. Even 30 years ago the accessibility of foods that many have become accustomed to was significantly less. Seasonality is now an irrelevant concept for most consumers with the perennial availability of the majority of harvested

²³ Woods, Michael, and Mary B. Woods. *Ancient Agriculture from Foraging to Farming*. Lerner, 2000.

products. The question again presents itself: How did society develop from small communities that grew their own food and raised their own animals into the modern society where the origin of any meal is a mystery? Over time the cultural ecosystem clearly shifted greatly as current societies no longer encourage self-sustaining agriculture, in fact it is discouraged. In American businesses, the focus is almost always on economic gain. By using food as trade currency humans developed the mindset that as long as something can be acquired at a fair price there is no reason not to acquire it. However, it seems that the attitude that money can get you whatever you want has remained and compounded over time. In the minds of many consumers environmental impact of the production methods of different foods is not a concern when shopping at the grocery store. While the societies that existed when agriculture was young, and trade was new where obviously geographically and technologically restricted, the technology that is used today has allowed the food trade to grow exponentially. As long as the price can be met, any food product can be shipped anywhere in the world. Food is no longer a concern in the consciousness of food-stable Americans and the mainstream method of food acquisition is a one-stop-shop at a grocery store that carries thousands of different food products. The origin of the products themselves are often not of interest to the shopper because they trust that the regulating bodies such as the Food & Drug Administration has put regulations in place to protect the consumer from any “bad” food. Humans no longer have to grow, or forage, or hunt the foods that they need, we have advanced so much that anything you could want is available in your local grocery store, by way of anywhere in the world.

Now if we return to the historical context of agriculture and pick up where we left off before this digression, we arrive at the Roman Empire and their system of food production. Within the empire, the vastness of the borders allowed for intranational trade among the regions

that benefitted greatly from the great infrastructure that the romans were known for.²⁴ The roads allowed for faster travel and the aqueducts were beneficial for the irrigation of farms and drinking water for the animals on the farms of the *villae rusticae*, the country villas which produced the food for the empire. The most important food item in the empire was bread. Grains were the single most important nutritional source for everyone in the empire, but fresh produce was reserved for and really only accessible to the societal elite. The concept that the rich receive the best food is not hard to imagine it is essentially how the world operates today. The cheapest foods are often the unhealthiest and often provide the least amount of nutrition to the consumers, but it is often the only thing that some people can afford. Similarly, in Rome, the lower classes and the slaves would eat coarse brown bread while the upper classes ate fine white loaves. In general, though, the Roman Empire brought to fruition many agricultural innovations and the government was actively supporting the agriculture of the empire. The roads allowed for not only the dissemination of the end product of food production, but also encouraged the sale of seeds and the introduction of new crops to different areas as well as new farming methods.

From the times of the Roman Empire through the middle ages there were countless innovations that increased productivity and undoubtedly made farming more efficient, but overall the structure of farming remained constant. Over the many centuries that passed from the Roman Empire through the Middle Ages, the general structure of food production was the same. Poor farmers, serfs, or enslaved people were the ones who would be counted on to grow the majority of the food product. During the age of exploration and as more and more Europeans began to settle in America, indigenous agricultural practices would be pushed to the wayside in favor of the European style. Exploitation of Indigenous peoples and use of the forced labor of

²⁴ Fernández-Armesto Felipe. *Near a Thousand Tables: a History of Food*. Free Press, 2004.

enslaved people would be the foundation of the American Agriculture industry in the North American colonies and in the infancy of America as a nation. The United States Federal Government would not outlaw Slavery until 1865 but sadly the exploitation of descendants of slaves would continue for many decades. The system of crop-sharing kept former slaves in cyclical poverty and trapped generations in this poverty. Even today agriculture workers are exploited en masse. Many undocumented peoples work in the food production sector and are often paid in cash, greatly skewing the number of agriculture workers that are represented in USDA statistics. I have personal experience as a farm hand, and though I am a documented person, the farm I work on paid all the workers cash, meaning that myself and my 9 coworkers would all be excluded from any statistics. As this erasure of labor occurs even now, it can be understood that in times when slavery was the norm it was even more common for laborers to be ignored.

It was during the Industrial Revolution that agriculture took on a whole new structure. With the advent of advanced electric technologies, the number of farms climbed to its peak in 1935 when farms were so much more productive, and the number of farms began to decline, and the size of each farm increased (see figures 1.1 and 1.2). The structure of modern conventional agriculture began to take shape in those years where the number of farms decreased. The structure of conventional agriculture was shaped by policies, notably the Farm Bills that were passed in the 1940s and 1950s, the social trends that evolved through the decades, and perhaps most importantly, the significant economic events which would shape the consumer market. For example, during the most severe years of the Great Recession from 2007 to 2009 consumers purchased more on sale and generic items, used more coupons, and shopped at discount stores

more frequently.²⁵ The recession saw a rise in unemployment as well as consumer awareness of the amount of money they were spending, especially on non-essential goods. While food products definitely do not fall under the “non-essential goods” umbrella, there are certain types of foods that consumers would forego in favor of a more economical choice: purchasing on sale, generic, or buying in bulk. In 2007, just as Pollan’s *Omnivore’s Dilemma* exposed many consumers to the reality of the conventional food system and food production, many people across America were reeling from the increasing economic hardships brought on by the recession making it difficult to consume in any way that did not prioritize their finances. This was not a time period where a consumer could re-prioritize and budget to spend a few more dollars on the organic, grass-fed beef in order to satisfy any desire to be a political actor. It was a time where meat would be purchased by many based solely on what the price per pound was, regardless of how the animal was raised. When shopping for a family, the priority was often full bellies rather than acknowledging one’s purchasing power. Not to mention that consumers were also bound to other rigid financial commitments such as rent, a mortgage, car payments, etc. The recession allowed for little flexibility in personal financial commitments, and groceries were one area where people could save a few dollars.

The Millennium Ecosystem Assessment takes on a mostly anthropocentric view of global ecological issues which means that each and every issue perceived through a lens that relates everything to how human beings will be or are affected. The main focus of the assessment’s discourse around food and food production is on the manner in which humans experience the food industry. Humans experience food insecurity, malnourishment, obesity, foodborne illness, allergies, intolerances, access (or lack of), etc. On a philosophical level, there have been

²⁵ Nevo, Aviv and Wong, Arlene, *The Elasticity of Substitution Between Time and Market Goods: Evidence from the Great Recession*. The National Bureau of Economic Research, Working Paper 21318. Cambridge, MA, July 2015.

arguments chastising the use of an anthropocentric mindset when it comes to the discussion and debate of environmental ethics, however it seems that the only way to get people to care about the environment is to spread the understanding that personal well-being relies on the well-being of the global ecosystems. Though, the environment can be easily conquered by humans and our technology, that is not necessarily what an anthropocentric view has to devolve into. All beings rely on the resources provided by the earth, so we can automatically value the earth and ecosystems because it sustains us. Viewing the earth merely as a resource to exploit is in direct conflict with the goal of sustaining humanity on earth. The attitude that has dominated our greater societal consciousness has resulted in immense ecological degradation left humans at a crossroads where climate action is becoming a priority in social and political decisions. Re-evaluating our societal values is a necessity if there is going to be any real and significant changes to save humanity from our past choices.

Chapter 3: Ethical Food Shopping

The increasing societal interest in sustainability and the food industry represents the growing relevance of alternative means of food production for the average consumer. The present dire need for a large-scale societal attitude shift comes on the heels of decades of environmental philosophers pondering the effects of human attitudes relating to the environment. Different parts of society have their own systems of valuing which arise from collective beliefs and motivations.²⁶ A system of valuing is what is known as an “ethic” and this chapter will

²⁶ Zimdahl, Robert, and Thomas Holtzer. 2016. “The Ethical Values in the U.S. Agricultural and Food System.” *Journal of Agricultural & Environmental Ethics* 29 (4): 549–57.

discuss if we have an environmental ethic within American society, and if so, what is it constituted of. In evaluating the relationships that humans have with the natural world, specifically their food systems, we can better understand what our society's motivators are, the obstacles to change and the institutions that maintain the status quo. Most modern environmental philosophy stems from Aldo Leopold's *Land Ethic*: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."²⁷ Leopold put forth the foundational bio-centric ethic upon which most environmental ethicists have built their arguments with ideas that focus on the innate value of the ecosystem and the impact that human actions have on the ecosystem while disputing the commonly understood and accepted idea that humans are the most powerful creatures on the planet. This contested view that idea that humans are the most significant beings in the universe is known as anthropocentric view, one that Leopold directly challenges in his land ethic. All of human history is anthropocentric and the view is reflected in our legal and economic systems. By maintaining human dominance over the natural world, one would be subscribing to what Karen Warren refers to as a "logic of domination".²⁸ This logic of domination is defined by Warren as "a structure of augmentation which leads to a justification of subordination," and in reference to the environment, this mindset results in a subordination of nature the "superior" human race. Warren is an ecofeminist who believes that this logic of domination is rooted in a patriarchal conceptual framework that pervades society and permits otherization and subordination. It is helpful to use this framework to analyze current social consciousness about the food industry because it provides some explanation for many consumer trends. By viewing

²⁷ Leopold, Aldo. "The Land Ethic." *A Sand County Almanac*, 2nd Edition ed., Oxford University Press, 1968, pp. 201–226.

²⁸ Warren, Karen J. "The Power and Promise of Ecological Feminism." *The Environmental Ethics and Policy Book*, Wadsworth Thomson, 2003, pp. 282–329

nature for its extractive purpose, humans have separated themselves from nature which leads to the domination perspective that Warren talks about. In the hierarchical structure that has become prominent in American society, humans are at the top and nature falls to a tier that rarely is given any attention. This is because there is a misconception that nature is a closed system and human actions cannot greatly affect the natural world. This mindset is touted by Climate Change deniers outright, but it is something that is present in the minds of many consumers. In the average person's mind nature may be seen as a self-regulating system that maintains a level of homeostasis independent of human actions. This idea, though, is contradictory to the study done by the scientists who wrote the IPCC report.

It seems that most people are not consciously denying the power that human actions have to impact the climate and the natural world, instead it is a general indifference to environmental issues. This indifference seems to stem from genuine ignorance about the environment and an unintended blindness to the realities of human ecological impact. Individual mindsets are not going to all of a sudden change on their own to better understand the general ecological reality; there needs to be a movement in the mainstream that encourages an ethic of care. Adopting an ethic of care towards the environment would encourage people to recognize their roles as stewards of the natural world. If we see the world as something to be cared for and respected rather than an independent system that can operate regardless of how we treat it then we can be better suited to institute new policies and laws that will benefit the environment long-term and value sustainability over profit.

Alternatives to the capitalist "Grow or Die" market economy is advocated for by Murray Bookchin, an ethicist known for his social ecology that views any ecological problems as rooted

within social issues.²⁹ Similar to Warren's concept of the "logic of domination," Bookchin's social ecology recognizes that the mindset that people exist in socially does not change when they have to think environmentally. If people prioritize finances, as they are forced to do in capitalist countries like America, then all other responsibilities become auxiliary. When the society that someone lives in reinforces the idea that money is the number one priority, the opportunity to develop other priorities diminishes. Social ecology is meant to counteract the capitalist system that values efficiency and financial success. Like Warren, Bookchin believes that social mindsets and attitudes translate into the mindsets that people have about the environment. The social ecology that Bookchin advocates for is based on the ideas that we must have an attitudinal, ethical, and spiritual change as well as the social shift to create a society that understands that humans have a duty to intervene in nature *responsibly*. If our society was to adopt an ethic where the environment is inherently valued is important for the general health of the natural world and would inform decisions about agriculture and food for the average person. Bookchin and Warren, though, believe that the only way to solve environmental issues is to first address social issues and advocate for social revolution before any environmental issues can be solved.

As a society, we need to understand that humanity relies on a healthy earth to be able to survive at a species level. Only then can we adopt new policies that allow for more sustainable methods of agriculture to be implemented across the board.

Though anthropocentrism can be an ecologically damaging perspective, that does not mean that for an ethic to be valid that it needs to completely ignore human position in the world. Because while humans are not the most important beings, they definitely have more control over

²⁹ Bookchin, Murray. "What Is Social Ecology?" *Environmental Philosophy: From Animal Rights to Radical Ecology*, edited by Michael Zimmerman, Pearson Prentice Hall, 2005, pp. 462–478.

the rest of nature than most other beings, whether that be based on our ability to reason, our social structures, or any other reason is not quite relevant to the argument made in this paper, so we will accept the reality that humans are powerful.

Leopold argues that there is a need for increased conservational education if there is to be a greater respect for the environment and awareness of ecological issues. We must focus on the power of individual choices, but we must also acknowledge the responsibility of industry in causing the environmental crisis. Unfortunately, most of the U.S. colleges of agriculture do not offer an ethics course.³⁰ Holtzer and Zimdahl found through a survey that that the students who are the future of the agriculture industry is not being given the opportunity to discuss the ethics involved in their intended field. Some issues that face the agriculture and food industries are “misuse of pesticides, not progressing rapidly enough toward sustainability goals, relative lack of involvement in addressing diet-related health issues, and lack of commitment to reducing agriculture’s role as a contributor to global climate change.”³¹ If the people who are seeking an education in the best practices of agriculture and food production are not even given the opportunity to contemplate the ethical implications of their practices, then can we blame the individuals who are working within the system? As with any system of size, the individuals are not the ones at fault, but they are the only ones who can cause the larger being to change. For example, a single farmer who uses harmful pesticides is not going to be the cause of county-wide water contamination. However, if every farmer in one county uses these harmful pesticides, then the system that promotes the efficient crop growth at the expense of the environment would be at fault. On the other hand, if one farmer decided that they were going to stop using these harmful pesticides, at cost to them while decreasing their crop output the individual farmer would most

³⁰ Zimdahl, Robert, and Thomas Holtzer. 2016.

³¹ Zimdahl, Robert, and Thomas Holtzer. 2016. p550.

likely be unable to stay afloat. For farmers to be able to shift to more sustainable methods, there needs to be cooperation among collective farmers who are aiming to change the industry for their benefit and for the benefit of the environment. Education is just one way to generate critical consciousness in social and environmental movements but restricting the ethical education that the future farmers of America have access to can only have the effect of keeping them ignorant of their power to unionize and change the industry.³²

For there to be any policy change in the food sector, the greater societal consciousness needs to shift towards an ethic of care. Having a caring perspective when viewing environmental issues means viewing the natural world as a resource for us, but a resource that humans have the responsibility to maintain (to a point)

Chapter 4: Agribusiness Needs a Makeover

As was established earlier, the earth is in trouble and we are hurtling towards environmental disaster per the UN's Intergovernmental Panel on Climate Change (IPCC) 2018 report. This report states that in 2017, the global climate has already increased by 1°C since pre-industrial times which, though it is a relatively low number, will have catastrophic effects if it raises any higher.³³ The projected impacts of higher temperatures would be higher sea levels, effectively destroying low-lying cities and many island nations, increasing occurrence of extreme

³² Meek, David, Katharine Bradley, Bruce Ferguson, Lesli Hoey, Helda Morales, Peter Rosset, and Rebecca Tarlau. "Food Sovereignty Education across the Americas: Multiple Origins, Converging Movements." *Agriculture & Human Values* 36, no. 3 (September 2019): 611–26.

³³ Smith, P., D. Martino, et al., 2007: Agriculture. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

heat waves, droughts, and food crises, among other things. The report not only warns about our collective future, but also offers a multiplicity of suggestions and opportunities to change the current path. One such change being adaptations to the current systems of conventional agriculture. As it currently exists, the traditional agriculture industry operates in a way that cannot be sustained for much longer. The negative environmental impacts as well as the degradation and diminishing of necessary resources are all obstacles to longevity that the industry must address in order to change the current path of not only the industry but the world. In the food industry, there is a line that connects consumers through the grocery merchants, transporters, farmers, etc. to the land that food is grown on. However, this connection is often muddied and not clear to the consumers. As mentioned in Chapters 2 & 3, many consumers do not concern themselves with issues of food production either because they are benignly ignorant or because they prefer different methods of thought. There are, however, individuals and purpose-driven companies within the agriculture industry that are aware of the negative effects that agricultural systems tend to have on the environment and so they have developed more sustainable methods of operating. These companies tend to be small local growers and producers who have the advantage of much more flexibility than the large companies that operate on an industrial-scale such as Cargill, Tyson or Archer Daniels Midland (ADM). By selling to consumers in a closer radius to the farm, farmers might be causing less fossil fuel emissions, or using better farming practices, etc. though this cannot be guaranteed on every farm that sells locally or regionally. But, it can be guaranteed that farms that sell locally or regionally are helping raise consumer consciousness to where they have to think about where and how their food is produced. Even if a consumer does not choose to purchase through a local farm, the

mere acknowledgement of its existence can help shift their mindset about the way that they purchase food.

By being more reliant on the community immediately around them, small farmers are able and expected to operate in a way that the consumers would approve of. There is more transparency with these small local producers than the large conglomerates if only because of the ability of consumers to interact with the people who actually grew the food in the case of local food. Let's say that a shopper purchases a package of mushrooms from their local traditional supermarket, the consumer can have no simple way of knowing where their mushrooms were harvested from or who did the work necessary to grow the mushrooms because of the many hands had to change before they arrived at the supermarket. Let's also imagine that the same shopper was to go to a farmer's market in their area and purchase some mushrooms from a local mushroom farm. When they make this purchase, they are not only purchasing food whose growing location they are knowledgeable of, but they are likely to be interacting with some of the people who grew the mushrooms and run the farm. These local producers who sell either at farmers markets or their own farm stands have become quite common in more urban areas in recent years as the result of increased consumer awareness.

Shoppers have begun to care more about the quality of the food that they are eating than just the price and convenience of the meal. There have been mass consumer trends aimed at eating "clean" or consuming "whole foods" that explains the consumer propensity to purchase slightly more expensive foods in order to have peace of mind about where and how the food was produced. Of course, there are outliers to this general trend because many people cannot afford these higher prices or do not have access to fresh, local produce. These people mostly reside in low-income urban areas that are typically areas with scarce access to sources of fresh foods. For

example, the South Bronx is a *food desert* though it simultaneously is home to the Hunts Point Food Distribution Center, one of the largest in the country. The people who live around this area are condemned to living in an area where fresh and healthy food options are scarce or maybe not available at all. This injustice cannot be blamed on lack of interest by the consumers. There are countless organizations seeking to get more fresh food businesses into these food deserts so that the families who live there can have access to better food options which will increase their overall health and decrease the health disparities between upper and lower classes. Access to healthy, fresh food options is the main stratifier of the classes when it comes to nutrition and health.

The nature of our current industrial agriculture system signals, as Woody Tasch says in his book, *Inquiries into the Nature of Slow Money: Investing as If Food, Farms, and Fertility Mattered*, that we ought to radically reconsider the idea of limits to growth.³⁴ The dramatic increase that we as a society have seen in the past few decades means that while we have increased our efficiency and net output in most industries, we have also become farther and farther removed from the reality of industrial America. And what's more, we have become so obsessed with the financial gain that can be earned from the food industries. "Using global markets as our guide, we choose commodity production over soil fertility, leaving the vast majority of sustainable-agriculture enterprises with little or no access to either investment capital or philanthropic support".³⁵ The propensity for investors and businesses to invest to favor the larger companies lies in the larger company's ability to nearly guarantee a return on investment. The minimal risk involved in investing in these multinational corporations like Tyson is what

³⁴ Tasch, Woody. *Inquiries into the Nature of Slow Money: Investing as If Food, Farms, and Fertility Mattered*. Chelsea Green Pub, 2010.

³⁵ Tasch, Woody. *Inquiries into the Nature of Slow Money: Investing as If Food, Farms, and Fertility Mattered*. Chelsea Green Pub, 2010. p.6.

really draws in business. Well-established enterprises will almost always fare better when the bottom line is strictly financial. On the other hand, the small companies tend to be better for the environment, the health of the people they serve, the economy of their local community, etc., though they are rarely perceived to be as beneficial for the investors because they tend to draw in less capital than their larger counterparts. In order for the industry as a whole to change small companies, large enterprises, family farms and the like all have to adopt the framework of the Triple-Bottom Line.³⁶ This framework posits that by focusing on the well-being of the environment, society, and finances, that the company itself will do better. But this ideal can only be achieved when the businesses within the industry acknowledges the power that they have to change not only the future of the industry. The awareness of the industry must be heightened from the basic level of financial awareness to the level at which they will care about the well-being of the environment and the people who work for them and whom they serve.

More and more, there are companies that are founded on specific values that are simultaneously based on caring for the earth and community and marketable. From a business perspective, it is important to not only build your company on a strong value foundation, but also make a profit. One such company that has flourished by promoting a triple bottom line is Dig Inn, a fast-casual restaurant that has been expanded from their first store front in New York City in 2011 to currently operating 29 restaurants in New York, Boston, and Rye Brook. With 4 more restaurants opening in New York City, Philadelphia, and Cambridge and their first full service establishment one can't argue with the success that Dig Inn has achieved. The mission statement on Dig Inn's website is flush with foodie buzzwords like "waste reduction," and "local produce,"

³⁶ Savitz, Andrew W., and Karl Weber. *The Triple Bottom Line. [Electronic Resource] : How Today's Best-Run Companies Are Achieving Economic, Social, and Environmental Success : And How You Can Too, Revised and Updated*. Jossey-Bass, 2014.

or “offset carbon emissions” but in short, Dig Inn is hoping to be part of the movement that changes the food system.³⁷ When eating at Dig Inn, customers are given essentially one type of dish they can get: the market bowl. Inside the market bowl, guests can choose what specifically they want to make up their meal, but the choices are vegetable-heavy with 1 grain, 2 vegetable sides and 1 protein included in the price. In an effort to reduce carbon emissions from food transportation and to support farmers in the regions surrounding their restaurants, Dig Inn sources most of their vegetables from local or regional farms. Approximately 2,722,641 pounds of local produced was sourced by Dig Inn and 21,000 pounds were sourced from Dig Inn’s very own farm in Chester, New York.³⁸ Dig Farm is located in Chester for its uniquely rich soil as part of the Black Dirt Region, a particularly fertile region known for its nearly black, extremely fine soil left over from the glacial floes.

In recognizing the impact that the food and hospitality business has on the environment, Dig Inn has done more than adjust their own production methods. They are a business that actively advocates for new food system. In every location, there are signs explain the “Dig-isms,” or goals that the business strives for. These -isms are as follows:

1. Buy food from farms,
2. Roll with the seasons,
3. Make meals from scratch,
4. Cook for a person,
5. Serve mostly vegetables,
6. Eat at a table,
7. Nurture the next crop.

³⁷ Dig Inn. “Our Mission.” *Dig Inn*, 2017. Web.

³⁸ Dig Inn. “We’re Making A Difference.” *Dig Inn*, 2017. Web.

Having these tenets in place as guideposts not only helps those in charge of decision-making at Dig Inn make choices that are in line with Dig Inn's ethics, but it also shares spreads awareness to customers about how important it is to support local agriculture and acknowledge that seasonality is not a natural phenomenon worthy of escaping. In fact, Dig Inn sent out an email this year letting their subscribers know that it was finally brussels sprout season, one of their best-selling dishes.

Chapter 5: Do They Know? Do They Care?

The purpose of Michael Pollan's book *The Omnivore's Dilemma* was to find an answer to the question "What's for dinner?" Though he does acknowledge his rather involved and roundabout methods to finding an answer, Pollan achieves this goal as well as explores the motivations and causes for every decision that we make about our food. Why buy the organic cauliflower instead of the traditionally grown? Do we want to order the salad or the pasta? Should I get the steak or the chicken? Should I care about where the meat came from? How was it raised? What about the cauliflower? Does it really matter if it was treated with chemical pesticides? Does any of this really matter? In researching for this book, Pollan sought answer these questions by exploring different methods of food production. The first part of his journey to writing this book is exploring the large-scale agriculture industry that feeds America. The industry that, as Pollan discusses, not only grows the feed, and raises the cows and chickens, and slaughters them, and markets them, but also the industry that has lobbyists working in Washington who make deals with politicians (more often than not) to maintain the status quo.

The status quo is one that allows the general population little insight into the production of their food. When purchasing conventionally produced food, it is almost impossible to know exactly where your food came from, which is not accidental, unless the food is purchased directly from local farmers and growers. Participating in the trend of buying local goods, known as the Local Food Movement, benefits the environment, the individual, and the local economy. Gary Holthaus said of the current state of agriculture,

Farming today is a matter of dealing not only with the complexities of earth, air, fire, and water, but also with the complexities of nation-states, transnational corporations, trade policy and so-called trade barriers, markets or lack of them, supply and demand, our human greed and our human compassion, our excitement at competition and our pleasure in cooperation.³⁹

The interconnectedness of modern agriculture requires the consumers, sellers, and producers to have an interdisciplinary approach to the issues that face the entire industry. Similar to the recommended business models for future food producers, the political value system must also shift to acknowledge the role that government policies play in the ability of food producers to practice sustainability.

At its most basic, the government can enact change within the food system by passing laws that regulate practices used by different food producers. The purpose of this kind of regulation shouldn't be merely focused on questionable marketing or potential false advertising and all kinds of sales strategies used by food production companies. Instead, the "safety" standards that are claimed to exist must be revamped to really evaluate the long-term health effects of the mass-produced food that Americans consume daily and the environmental effects

³⁹ Holthaus, Gary H. *Learning Native Wisdom: What Traditional Cultures Teach Us About Subsistence, Sustainability, and Spirituality (Culture of the Land)*. University Press of Kentucky, 2008.

of the practices. Our current political framework unfortunately has many shortcomings that benefit the conglomerate conventional food production companies and often disadvantage small farms and businesses as well as the American consumers. For example, there is more leeway for mistakes in large meat production companies because there is a greater margin for error, though the regulating boards indulge these large companies far more than they do the small, locally run business that raise and slaughter their own animals. In the documentary *Food Inc.*, Joel Salatin runs Polyface Farms and recounts the attempts by the USDA to shut down his farm where chickens, cows, and pigs are raised pastorally on the grounds that the method of slaughtering was unsanitary because it takes place outside.⁴⁰ He fought back against these accusations by having his chicken tested for micro-bacteria after they are slaughtered. The results showed that Salatin's chickens had averaged 133 colony-forming units (CFU) of bacteria per milliliter whereas the store-bought factory slaughtered meat averaged 3600 CFu/mL. By proving the cleanliness of his chicken, Salatin was able to display not only the benefits of eating from his small pastoral farm, but also the health risks that come with eating factory processed chicken. Salatin then proceeds to challenge the practical authority of the United States Department of Agriculture to enforce any and all laws that they pass, though the USDA website touts many instances where their investigative bureaus has been successful in catching law-breakers.

Though it is hard to prove using more than suspicious coincidences, connections and correlations, there are many people who believe that the government has a vested interest in the prosperity of large agricultural businesses. If the general nutrition of the country is low, then the medical bills tend to be larger due to these environmental and nutrition-based illnesses and conditions. Further, because these illnesses require treatment, pharmaceutical companies profit.

⁴⁰ *food Inc.* (2009). [DVD] Los Angeles, CA: Robert Kenner; Richard Pearce; Eric Schlosser; Melissa Robledo; William Pohlad.

Theoretically, a politician looking for funding could very well acquire funds from these three industries by supporting a bill which would encourage schools to feed children heavily processed foods at lunchtime which could lead to life-long illnesses and line the pockets of those working in the industrial agriculture, medical, and pharmaceutical sectors. Beyond these concerns, it should also be noted that there is a direct correlation between government officials who are funded by industrial agriculture enterprises. Those politicians who rely on funds from businesses such as Tyson will be pressured to support legislature that positively impacts, or at least doesn't negatively impact, the businesses which they rely on, consider themselves to be, or those that they serve. If the regulations on cattle farming is being tightened, then McDonalds is going to pressure the politicians that they support to oppose such a bill. Or, if there is a tax bill introduced to tax fast-foods higher than raw foods, McDonalds again would pressure the politicians they support to oppose the potential law. It may seem that there is no way that the agriculture business can change the sub-system that works within the United States government, but if the industry sought out solutions to the environmental and social problems that it faces, then maybe in turn the government will see value in likewise adopting the Triple Bottom Line Framework for most of its business relationships. If all of the politicians began to value the environment and the society which they serve as much as they value their own success and financial success, then maybe real progress can be made in the effort of developing sustainable agriculture methods. What really ought to change for the entirety of the United States to benefit is the value system of our government.

In recent political debates, environmental issues have become key points in many, if not all, candidates' platforms as our global society becomes more aware and nervous about the

“climate and ecological crisis” that our world is facing.⁴¹ As environmental issues become more important in the global political spheres, people are becoming more aware in their own abilities to enact change through more than simple acts such as recycling or reusing. Individuals are becoming more active citizens and using their political power to elect representatives with goals that benefit the environment and using their consumer power to drive market trends as well as the platforms on which politicians run.

Chapter 6: Who Cares and How They Show It

As it should now be apparent, the agriculture industry has within it a variety of means of producing, growing, and raising the food that is consumed in the United States. There are the imported fruits in vegetables that furnish the shelves of the evergreen grocery stores, the side-of-the-road farm stands, family owned farms that sell to their community through farmers markets, industrial feedlots that raise beef and dairy cows, the vast swaths of land in the Midwest on which corn and soy are grown, chicken farmers who are tied to processors like Tyson, among others. There is also the many specialty growers and non-traditional farmers all over the country who seek to grow and raise food according to a set of principles rather than for the benefit of profit. Overall, I see there to be far more benefits of being a purpose-driven enterprise as opposed to those businesses motivated by money. Being a triple bottom-line enterprise would mean serving the environmental, social, and financial interests of the company. This framework does not dictate that a company be entirely holistic as it is unlikely to be able to alter the mental models of business executives to be hyper-aware of the comprehensive effects of the business’

⁴¹ Greta Thunberg. UN Climate Summit, 2019.

processes. Rather, businesses will be more likely to shift the way they operate in favor of sustainable practices if they are made aware of the effects that their unsustainable practices will impact their own business' ability to succeed. Similarly, the United States government from a shift in its value system. If politicians on the whole were able to see past themselves and the constant race for re-election, I believe there could be real change enacted in more than just the agriculture sector. But in terms of agriculture, the most benefit for the consumer would come if there was a regulating agency that was recognized for its accuracy and was independent of the government. Hopefully such an agency would be able to truly enforce all laws regarding agriculture and remain independent of the obsession with financial success.

We now live in a society that is reliant on the domesticated animals, few Americans use hunting as a means of sustenance, and the easy access of fresh produce, a quick stop at the grocery store. Without the advantages of agriculture, it is unlikely that as a species we would have evolved this far, and it is unlikely that unless we change the way that we consume, that we will evolve much farther.

Using the technology that we have the advantage of having, one could easily become aware of the easy ways that they can support local farms and small farmers in their region. Attending farmers markets, becoming members of a Co-Op, volunteering at these farms, visiting them if they are open to the public, visiting their farm stands are all ways that an individual can exercise their power as a consumer to make their preferences in selection heard. The only issue that I think faces these local farmers is the price of their produce as compared to the food sold at the grocery store. It can be assumed that everyone would want the very best of everything for themselves, but that is not always feasible for a number of reasons, the main being price. If there

was some way that the cost of local food could be brought down without sacrificing all of the benefits of such a system, I believe that more and more consumers would be drawn in.

There is a need for wider change across the food industry. There are restaurants in cities across the country that have begun to adapt an optional carbon farming surcharge. This charge was instituted by restaurateurs Anthony Myint and Karen Liebowitz have founded the public-private initiative called Restore California that supports carbon farming practices.⁴² The goal of Restore California is to increase the cooperation among farmers, restaurants, and diners “to create a renewable food system rooted in healthy soil.”⁴³ This initiative has focused on a problem within the food production industry and has developed a method that could increase consumer awareness and involvement in solving this problem. Their solution to degraded soil integrity is called carbon farming. According to the Restore California website, carbon farming involves a variety of methods that increase the carbon that is stored in soil and removed from the atmosphere through photosynthesizing plants. Some of these methods include cover cropping, crop rotation/polyculture, compost application, incorporating trees, among others. The process is meant to “farm with nature” and naturally increase the beneficial soil organisms. Restore California hopes that their program will aid farmers who cannot afford some of these more environmentally friendly practices because they have to focus on meeting their bottom line. By setting this up as a voluntary surcharge rather than a tax that consumers are invited to become part of the solution rather than feel like they are being blamed by a problem that someone else created (as they might if it was a mandatory tax).

The odds are stacked against the local food movement. They don’t have the financing, the government support, or the deep stability that industrial farming has had the opportunity of

⁴² Henry, Sarah. Restaurants Put Climate Change on the Menu.” *The Washington Post*. 1 November 2019.

⁴³ Perennial Farming Initiative. “Restore California.”

attaining in its existence. Though there are only a few flaws which keep the new system from overtaking the old, obstacles I believe could be overcome. There are plenty of people offering solutions to plenty of problems, the next step is to fund these projects, give them more media attention, give them public support, and finally make environmental issues more important in government elections. The next Farm Bill will be in 2023 and hopefully will be written with a more ecologically sensitive perspective but waiting until then to have policies change is not enough to save us from the estimates made in the IPCC report.

References:

- 2017 Census of Agriculture. Volume 1, Geographic Area Series. Part 32, New York, State and County Data. [Washington, D.C.]: United States Department of Agriculture, National Agricultural Statistics Service, 2019.
- “A Condensed History of American Agriculture 1776-1999.” *United States Department of Agriculture*, USDA, 2000.
- American Community Survey: 2011-2015.
- Berry, Wendell. *The Unsettling of America: Culture & Agriculture*. Counterpoint, 2015.
- Bookchin, Murray. “What Is Social Ecology?” *Environmental Philosophy: From Animal Rights to Radical Ecology*, edited by Michael Zimmerman, Pearson Prentice Hall, 2005, pp. 462–478.
- Crowe, Julie A. Homchick, and Gregory Schneider-Bateman. “Paleo mythologies: The Spiritual Persuasion of Evolution.” *Poroi: An Interdisciplinary Journal of Rhetorical Analysis & Invention*, vol. 14, no. 1, July 2018, pp. 1–28.
- De Fazio, Manfredi. 2016. "Agriculture and Sustainability of the Welfare: The Role of the Short Supply Chain." *Agriculture And Agricultural Science Procedia* 8, no. Florence "Sustainability of Well-Being International Forum". 2015: Food for Sustainability and not just food, Florence SWIF2015: 461-466. “Employment in Agriculture (% of Total Employment) (Modeled ILO Estimate).” *The World Bank*, Sept. 2017.
- Dig Inn. “Our Mission.” *Dig Inn*, 2017, Web.
- Dig Inn. “We’re Making A Difference.” *Dig Inn*, 2017. Web.
- Fernández-Armesto Felipe. *Near a Thousand Tables: a History of Food*. Free Press, 2004.
- food Inc.* (2009). [DVD] Los Angeles, CA: Robert Kenner; Richard Pearce; Eric Schlosser; Melissa Robledo; William Pohlada.
- Henry, Sarah. Restaurants Put Climate Change on the Menu.” *The Washington Post*. 1 November 2019.
- Holthaus, Gary. *From the Farm to the Table What All Americans Need to Know about Agriculture*. Lexington: University Pr. of Kentucky, 2014.
- Holthaus, Gary H. *From the Farm to the Table What All Americans Need to Know about Agriculture*. The University Pr. Of Kentucky, 2014
- *Learning Native Wisdom: What Traditional Cultures Teach Us About Subsistence, Sustainability, and Spirituality (Culture of the Land)*. University Press of Kentucky, 2008.
- IOM (Institute of Medicine). 2012. Improving food safety through a One Health approach. Washington, DC: The National Academies Press.
- Johnson, Renée. “The Role of Local and Regional Food Systems in U.S. Farm Policy” in *Local Food Systems: Background, Federal Policies and Programs*, ed. Wagner, Tabitha. Agriculture Issues and Policies. New York: Nova Science Publishers, Inc, 2016.
- Leopold, Aldo. “The Land Ethic.” *A Sand County Almanac*, 2nd Edition ed., Oxford University Press, 1968, pp. 201–226.
- Lucky Strike. “Reach for a Lucky.” Advertisement. 1930.
- Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.
- McCoy, Krish. “The Grapefruit Diet.” Edited by Pat F. Bass, *EverydayHealth.com*, 16 Dec. 2009.

- Meek, David, Katharine Bradley, Bruce Ferguson, Lesli Hoey, Helda Morales, Peter Rosset, and Rebecca Tarlau. "Food Sovereignty Education across the Americas: Multiple Origins, Converging Movements." *Agriculture & Human Values* 36, no. 3 (September 2019): 611–26.
- Miller, G. Tyler, and Spoolman, Scott. *Living in the Environment: Principles, Connections, and Solutions*, 17th ed., Chapter 10: Sustainable Cities. Belmont, CA: Brooks/Cole Publishing, 2011.
- Nestle, Marion. *Food Politics: How the Food Industry Influences Nutrition and Health*. Los Angeles, CA: University of California Press, 2013.
- Nevo, Aviv and Wong, Arlene, *The Elasticity of Substitution Between Time and Market Goods: Evidence from the Great Recession*. The National Bureau of Economic Research, Working Paper 21318. Cambridge, MA, July 2015.
- Pollan, Michael. *The Omnivore's Dilemma: A Natural History of Four Meals*. Penguin Press, 2016.
- Russo, Mallory, "Food for Thought: Analyzing the Impacts of Livestock Factory Farming in the United States" (2017). *Student Theses 2015-Present*. 46.
- Savitz, Andrew W., and Karl Weber. *The Triple Bottom Line. [Electronic Resource] : How Today's Best-Run Companies Are Achieving Economic, Social, and Environmental Success : And How You Can Too, Revised and Updated*. Jossey-Bass, 2014.
- Shuman, Michael. *The Local Economy Solution: How Innovative, Self-Financing "Pollinator" Enterprises Can Grow Jobs and Prosperity*. Chelsea Green Publishing, 2015.
- Smith, P., D. Martino, et al., 2007: Agriculture. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Spielmaker, Debra, and Yasuko Mitsuoka. "Historical Timeline - Farmers & the Land." *National Agriculture in the Classroom*. 2018.
- Tasch, Woody. *Inquiries into the Nature of Slow Money: Investing as If Food, Farms, and Fertility Mattered*. Chelsea Green Pub, 2010.
- Thunberg, Greta. UN Climate Summit, 2019.
- USDA, Economic Research Service, *Agricultural Productivity in the U.S.* data series, as of October 2017.
- USDA, Economic Research Service using data from USDA, National Agriculture Statistics Service, Census of Agriculture (through 2012) and *Farms and Land in Farms: 2017 Summary*
- USDA, Economic Research Service and National Agriculture Statistics Service, *Agriculture Resource Management Survey*. Data as of November 30, 2018.
- Warren, Karen J. "The Power and Promise of Ecological Feminism." *The Environmental Ethics and Policy Book*, Wadsworth Thomson, 2003, pp. 282–329
- "What Is Paleo?" *The Paleo Way*, thepaleoway.com/what-is-paleo/.
- Wilder, Russell M. "Fads, Fancies And Fallacies In Adult Diets." *Sigma Xi Quarterly* 26, no. 2 (1938): 73-87.
- Woods, Michael, and Mary B. Woods. *Ancient Agriculture from Foraging to Farming*. Lerner, 2000.

Zimdahl, Robert, and Thomas Holtzer. 2016. "The Ethical Values in the U.S. Agricultural and Food System." *Journal of Agricultural & Environmental Ethics* 29 (4): 549–57.