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Our Failing Food System: Productivity Versus Sustainability

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OUR FAILING FOOD SYSTEM: PRODUCTIVITY VERSUS SUSTAINABILITY

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ABSTRACT

The United States food system is a complex intersection of the activities, people and resources that are involved in feeding the American population. Americans' relationship with food includes our perception, consumption, and production of it—all of which are aspects that affect the quality of our overall food system. However, our current food system is by no means perfect; rather, it is crucially flawed and requires vast improvements in order to become a healthy and truly nourishing organism. With significant changes in the direction of sustainability, the American food system can become beneficial to the American people, land, and economy by achieving a "triple bottom line" that values people, planet, *and* profit.

INTRODUCTION

For the past three years at Fordham University’s Rose Hill campus in the Bronx, New York, I have lived in my own apartment, meaning no home-cooked meals from my parents and no meal plan at the campus cafeteria to feed my often-insatiable appetite whenever I wanted and with however much food I desired. Instead, I discovered both the delights and the challenges of shopping and cooking for myself. Like most college students, however, I am on a budget, so I learned very quickly that my bank account simply could not fund my ever dietary whim. As tempting as it may have been to just frequent the dollar-a-slice pizza shop across the street, I knew that eating economically wouldn’t be so easy if I wanted to eat healthfully, too.

As important as finding what food to eat was finding where to buy it. I loved wandering the aisles of the local farmers’ market with its abundance of fresh produce and homemade baked goods, but selections dwindled with the onset of winter. Big-name health food stores had no shortage of interesting and wholesome foods, but most weren’t within walking distance or within my price-range. A quick walk up the road from my apartment provided me with a plethora of options—McDonalds, Domino’s, Burger King, Popeye’s, Dunkin’ Donuts, Checkers and Little Caesar’s Pizza were all located within a third-mile from each other—but I knew that fast food often fell short on flavor

and, more importantly, nutrition. The nearby corner store supplied some of the staples I needed, but six dollars for a bunch of bananas? No thanks.

According to the USDA's Food Access Research Atlas, which allows the user to explore food access indicators by census tract, the neighborhood in which I've done the bulk of my grocery shopping over the past three years is not considered a food desert.¹ Thinking back on my first experiences cooking and grocery shopping for myself, I can only imagine what it must be like for people who do live in food deserts or whose budgets are even more restricted than my own. I have been lucky enough to enjoy the luxury of my parents' fully-stocked fridge during my summers at home, but what about the people who don't get a "summer break" from the challenges of eating healthfully and affordably?

A number of federal assistance programs support hungry individuals and families, and in a perfect world, those programs would be enough. While programs such as the Supplemental Nutrition Assistance Program (SNAP) or Women, Infants, and Children (WIC) do alleviate some of the troubles of buying food in today's economy, they fail to dismantle the structures that have made fast food cheap and fresh food costly. Too many Americans today are victims of the United States' hunger-obesity paradox: often the most food-insecure people are the most overweight and obese and consequently

¹ United States Department of Agriculture Economic Research Service. "Food Access Research Atlas." Last modified May 8, 2013. <http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx#.UZBqNrWmiAh>

suffer from diabetes and other diet-related diseases. Clearly there is room for improvement in the policies that affect food prices.

In this essay, I will examine food-related issues through the lens of three disciplines: environmental history, environmental politics, and environmental ethics. As I trace the history of food policy in the United States, I will take note of the political structures that have shaped the food system as we know it today, as well as the ethical and justice-related issues that have resulted. Finally, with this research in mind, I will propose my own policy suggestions to improve the system that has intensified not only my struggle to eat nutritiously during my first years living on my own but also the struggle of millions of other Americans to eat well and within budget.

DATA ON THE PROBLEM

Impacts of an Industrialized Food System. For most of human history, the United States was home to a generally self-sufficient system of agricultural and food production. Most Native Americans and the country's first European settlers produced, processed, and consumed their own food. With the aid of tools they made, seeds they produced, and work animals they raised, these families participated in a system that allowed the end user to control food production from seed to plate.

Produce in our supermarkets today, however, comes from farms that are located an average of 1,500 miles away.² Nutrition woes no longer concern under-nutrition, but chronic dietary diseases such as obesity, heart disease, and diabetes. The basic, unbranded staples that once typified the American diet have been replaced by processed, branded products and pre-prepared meals. These changes, among others, illustrate the shift from agrarianism to agribusiness in America. The character of the food system has degenerated as the industrialization of the food system has transformed the way food is produced and consumed.

² Nordahl, Darrin. *Public Produce: The New Urban Agriculture* (Island Press: Washington, DC, 2009), 22.

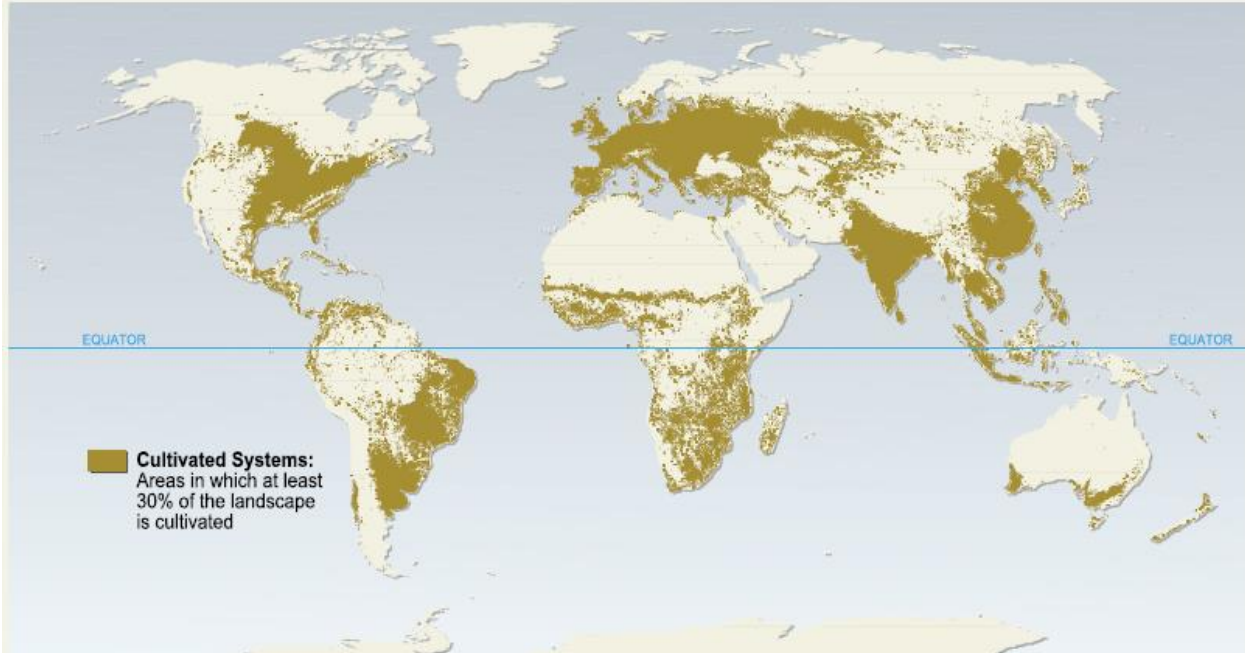


Fig. 1: Global Cultivated Systems³

Cultivated systems include lands that are used primarily for crop, agroforestry, or aquaculture production. Figure 1 shows areas around the world in which at least 30% of the landscape comes under cultivation in any particular year. As the map indicates, the U.S. Great Plains and the bulk of the nation’s eastern half represent one such major cultivated system. Although innumerable people benefit from crop production in the U.S., crop yields from industrial agriculture have not come without significant costs to both the health of natural ecosystems and the people who inhabit them.

Climate Change. Agricultural productivity is highly dependent upon climate. Climate change thus far has proven to be beneficial to some plants and detrimental to others. However, under higher heat-trapping gas

³ Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: Synthesis*, (Island Press: Washington, DC, 2005), 29.

emissions scenarios, projected climate changes are expected to damage our food system's ability to produce food, feed, fuel and livestock products.⁴

To the extent that climate change affects agriculture, agriculture also affects climate change—the two processes are inextricably linked.

Agricultural activities involve the production and release of substantial amounts of carbon dioxide, methane and nitrous oxide, which are some of the main culprits of climate change. Today's long-distance, large-scale system of food transportation is incredibly energy-intensive, releasing significant quantities of fossil fuels that generate significant quantities of greenhouse gas (GHG) emissions.

⁴ Karl, Thomas R. et al. "Agriculture," in *Global Climate Change Impacts in the United States*, (Cambridge University Press: Cambridge, 2009), 71.

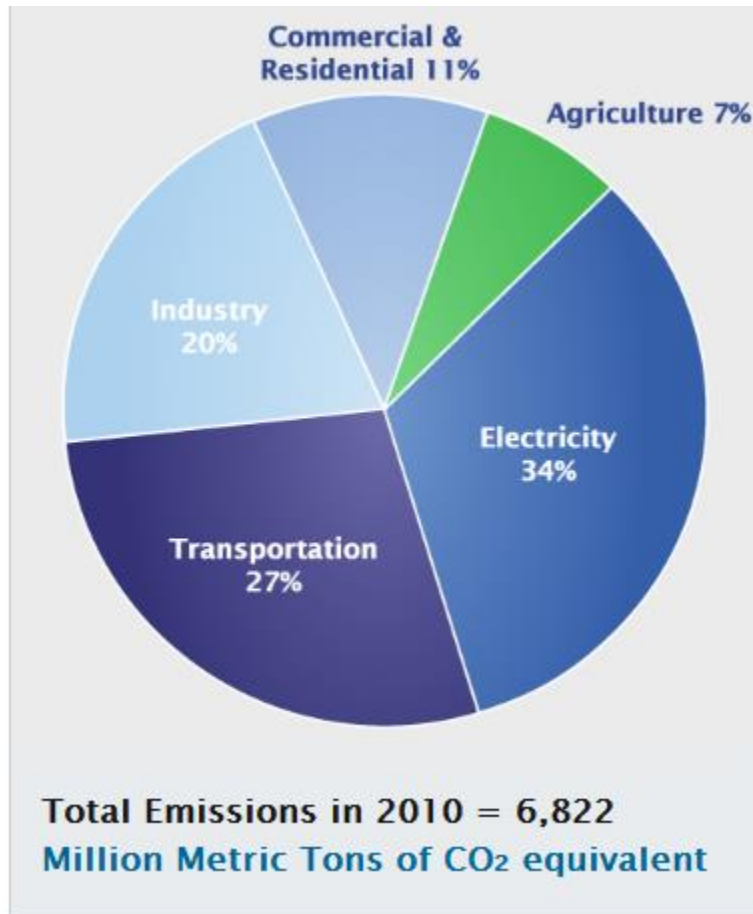


Fig. 2: Total U.S. Greenhouse Gas Emissions by Economic Sector in 2010⁵

The agricultural sector accounts for about 7% of all U.S. GHG emissions, as Figure 2 indicates. Representing just over 35% of the sector’s overall emissions, nitrous oxide from agricultural soil management is the largest source of GHG emissions from the agricultural sector.⁶ These nitrous oxide-emitting activities range from fertilizer application to irrigation and tillage methods. Furthermore, enteric fermentation—part of the digestive

⁵ United States Environmental Protection Agency. “Sources of Greenhouse Gas Emissions.” Accessed March 18, 2013.

<http://www.epa.gov/climatechange/ghgemissions/sources/agriculture.html>.

⁶ United States Department of State. *U.S. Climate Action Report 2010*, (Global Publishing Services: Washington, DC, 2010), 20.

process in livestock, especially cattle—represents roughly 33% of the agriculture sector’s GHG emissions. The remainder of the sector’s emissions is the result of manure management, rice cultivation and burning crop residues. Moreover, these figures from GHG measurements in 2010 reveal a 13% increase in GHG emissions since 1990, which is the effect of increased methane and nitrous oxide emissions from emission-intensive liquid systems of manure management.⁷

Not only do farming practices themselves contribute to climate change but also the multitude of other stages in food production release GHGs into the atmosphere.

⁷ “Sources of Greenhouse Gas Emissions.”

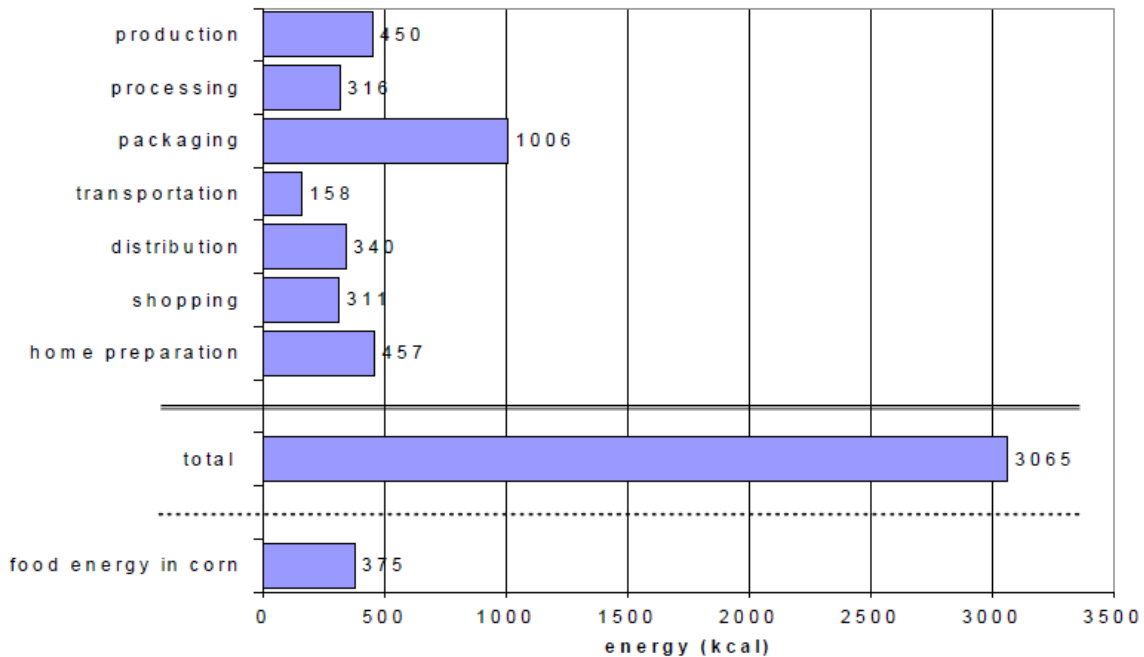


Fig. 3: Energy Inputs for a 455g Can of Sweet Corn⁸

Today’s food system has developed a powerful dependence on fossil fuel, illustrated by the energy tallies in Figure 3. The extent and diversity of food selections in the U.S. relies heavily on processing, packaging and transporting food and food products—all of which are practices that necessitate the use of energy, usually in the form of fossil fuels. Tracing the entire life cycle of a food product reveals a striking amount of energy use: energy to raise crops in the fields, energy to transport crops to processing facilities, energy to process crops and food products, energy to package products, energy to transport products from processing plants to far-off retailers, energy to store products in supermarkets, and energy to

⁸ Heller, Martin and Keoleian, Gregory, “Life Cycle-Based Sustainability Indicators for Assessment of the U.S. Food System,” Center for Sustainable Systems at University of Michigan, 2000.

refrigerate and prepare food in individual homes and restaurants. As Figure 3 demonstrates, performing a comprehensive life cycle analysis reveals that the energy inputs required to produce a can of corn are eight times the amount of food energy contained in the corn itself. Likewise, the average breakfast cereal requires 15,675 kcal/kg to process and prepare but only contains 3,600 kcal of food energy per kilogram; similarly, a 12-ounce can of diet soda uses 2,200 kcal to produce only 1 kcal in food energy.⁹

Greenhouse gas emissions are a key driver of climate change, which in turn affects agricultural systems. Despite the diversity of American agricultural landscapes and their varying degrees of vulnerability to climatic change, the U.S. Cornbelt and southeastern U.S. are expected to be particularly sensitive to the effects of climate change. In addition, crops that are already near climate thresholds, such as wine grapes in California, are anticipated to degrade in quantity and quality, even with modest warming of the planet.¹⁰

All in all, not only is today's food system inefficient but it is also environmentally unsustainable. By continually releasing GHGs into the atmosphere, food system processes exacerbate global climate change. Maintaining current agricultural practices and food production methods equals a loss for the overall food system and a loss for the global climate.

⁹ Heller and Keoleian, "Life Cycle-Based Sustainability Indicators for Assessment of the U.S. Food System," 29.

¹⁰ Parry, M.L. et al. *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*, (Cambridge University Press: Cambridge, 2007), 631.

However, climate change is not likely to improve on its own; it is the responsibility of agricultural practices to progress in such a way that both agriculture and the environment can win.

The Food Desert. The obesity-hunger paradox describes a recent phenomenon in parts of the U.S. in which the hungriest people may not be severely underweight, but excessively overweight. Agricultural subsidies have made a handful of food staples, such as corn, soybeans and wheat, both cheap and abundant. The cheapness of these commodities provides firms with an incentive to use them. Thus, Americans may find that cheap industrial products derived from these few subsidized food staples comprise the bulk of their diets. Considering that the cheapest industrial food products on grocery store shelves and restaurant menus are also usually the least healthy, a clear link exists between farm subsidies and the American obesity pandemic.

In his analysis of the obesity-hunger paradox in *The Real Cost of Cheap Food*, author Michael Carolan theorizes that the key factor in the linkage between farm subsidies and obesity is advertising. Because subsidies make processed foods profitable, food companies acquire ample funds for expensive advertising campaigns. In 2003 the USDA allocated \$333 million for nutrition education—a figure that pales in comparison to the \$10 to \$15 billion spent annually on food and beverage advertising aimed at children. Together, the major food companies that spend billions of dollars a year

marketing their products do have an influence on Americans' diets. Several studies have found that as the number of television hours watched by children increases, so does the frequency of requests, purchases and servings eaten of advertised food.¹¹

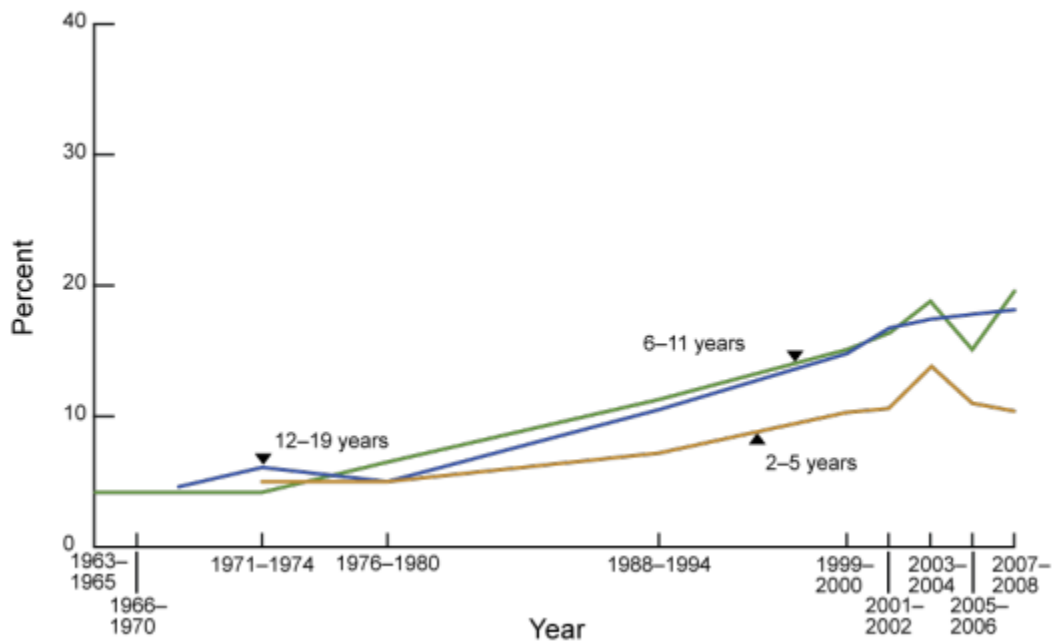


Fig. 4: Trends in Obesity among Children & Adolescents: United States, 1963-2008¹²

Overweight and obesity is a leading indicator of health. Using data from the National Health and Nutrition Examination Survey (NHANES), Figure 4 illustrates by age group the notable increase in obesity among children and adolescents in the U.S. since the early 1960s. Specifically, the 2007-2008 NHANES estimated that 16.9% of children and adolescents aged

¹¹ Carolan, Michael. *The Real Cost of Cheap Food*, (Earthscan: New York, 2011), 69-70.

¹² Ogden, Cynthia and Carroll, Margaret. "Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008," *Centers for Disease Control and Prevention* (2010): 3.

2-19 years are obese. The survey also recorded racial and ethnic disparities in adolescent obesity, as the following Figures, 5 and 6, make evident.

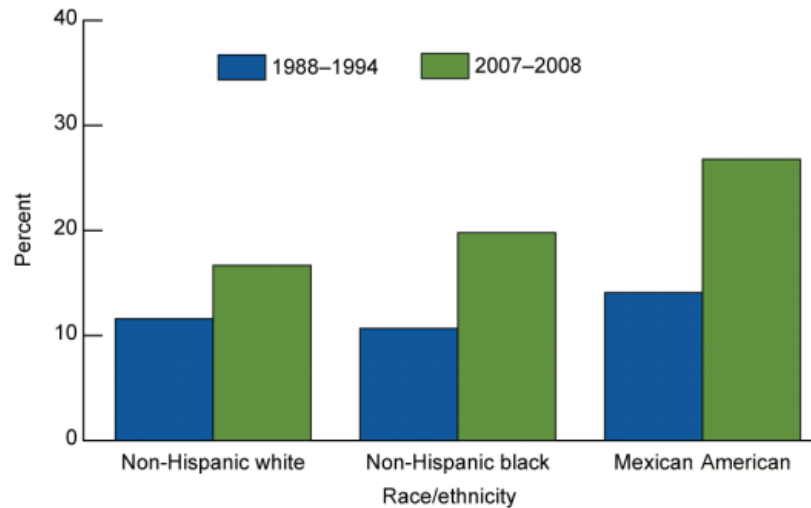


Fig. 5: Prevalence of Obesity among Boys Aged 12-19 Years, by Race/Ethnicity: United States, 1988-1994 and 2007-2008¹³

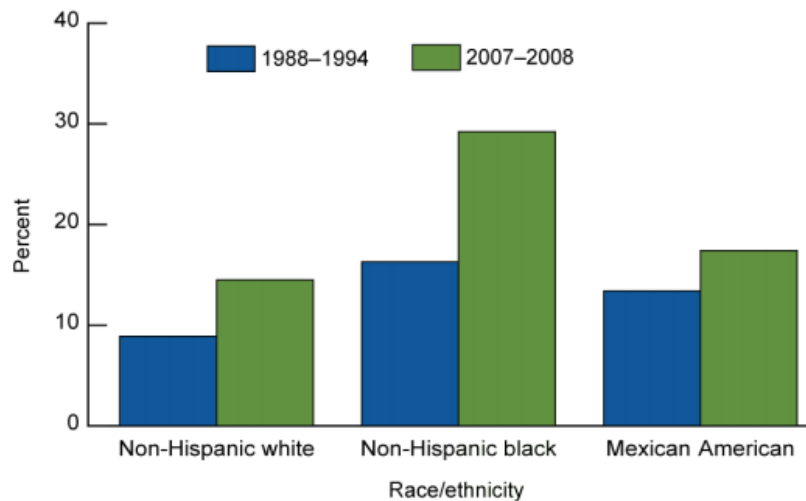


Fig. 6: Prevalence of Obesity among Girls Aged 12-19 Years, by Race/Ethnicity: United States, 1988-1994 and 2007-2008¹⁴

¹³ Ogden and Carroll. "Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008," 3.

Associated with racial and ethnic ties to obesity is the correlation between obesity and income. Accessibility to supermarkets is negatively correlated with income, meaning that a low-income neighborhood's choices in healthy foods tend to be limited. Such communities where residents lack access to healthy food and suffer the twin problems of hunger and obesity are called "food deserts."

Among food deserts, accessibility to health foods varies. Thus, the term "food desert" can describe neighborhoods without large supermarkets, which in general sell a high proportion of healthy food; in other instances, it can describe communities in which healthy food might be available but is also unaffordable.¹⁵

Limited access to fresh, healthy foods is further intensified in communities dominated by racial and ethnic minorities, rendering food access an issue of justice in many cases.

¹⁴ Ogden and Carroll. "Prevalence of obesity among children and adolescents: United States, trends 1963-1965 through 2007-2008," 4.

¹⁵ Walker, Renee et al. "Factors influencing food buying practices in residents of a low-income food desert and a low-income food oasis," *Journal of Mixed Methods Research* (2011): 247-248.

Rise of Industrialism and the Push for Productivity

History of the United States Food System. Today's industrial food economy is the product of years of changes and developments, governed by an array of food industry interests and influences. In recent years most decisions regarding the food industry have been economically-driven, shaping our food system in ways that the modern American consumer may not realize.

The period after World War II in the United States saw the transformation of traditional agrarianism, manifesting in the decline of small family farms and individual produce markets and stands. As cities developed, land uses became increasingly distinct; new zoning kept agriculture and the city ever more separate. Thus, with urban settlements now kept manicured and sterile, food production was no longer suitable in or around cities. In fact, the number of U.S. farms decreased by 4 million in a sixty-year period, from 6 million farms in 1940 to 2 million by the new millennium. Food production was therefore taken over by large, corporate-owned, factory-like agribusinesses outside the city. Consequently, most Americans became disconnected from their food—where it came from, how to grow it, and when it was ready to eat.¹⁶

¹⁶ Nordahl, *Public Produce*, 17-30.

Land as a Commodity. In order to understand the history of food and food policy in the United States, one must consider America's ecological history. For thousands of years native populations utilized and modified the American natural environment with their own established systems of subsistence. With European settlement of New England, however, came significant and rapid changes to the New England landscape. Most early explorers in America found a land that was drastically different than the one they left behind; often what was scarce in Europe could be found in excess in New England, from fish to furs, from timber to sassafras. Thus, explorers and settlers developed a common vision of America as a land of abundant plant and animal life—a land of abundant commodities. With this outlook they treated members of American ecosystems as individual units with potential for commerce.

Many European visitors and settlers were perplexed by the apparent poverty of the natives whom they encountered. In a land of such plenty, how could its people live so poorly? As Thomas Morton pondered, "If this Land be not rich, then is the whole world poore?"¹⁷ Although the perceived poverty of Native Americans was based on European culturally-biased notions of wealth, few Europeans stopped to consider whether native treatment of the land was perhaps more suitable for the ecological setting. Instead, they criticized native ways of life, attributing underutilization and

¹⁷ Cronon, William. *Changes in the Land*, (Hill and Wang, New York: 2003), 33.

mismanagement of the land to their “uncivilized” lifestyles. Therefore, colonists kept to what they already knew and employed most of the same agricultural and ecological practices that had been used for generations in Europe in order to “improve” underused American land and natural resources. In fact, some colonists used native hunting and gathering practices to justify European claims to American land. As colonial theorist John Winthrop wrote, “As for the Natives in New England, they inclose noe Land, neither have any settled habytation, nor any tame Cattle to improve the Land by, and soe have noe other but a Naturall Right to those Countries.”¹⁸ Such Eurocentric attitudes and blatant refusals to recognize the legitimacy of native lifestyles paved the way for colonists to radically transform the American landscape. And so began the tradition of agrarianism in colonial America.

Commercial agriculture in colonial New England owes much of its success to grazing animals. Without grazing animals, colonial surpluses probably would have been meager; with them, colonial agriculture was able to expand at a rapid rate. So intense was the expansion of colonial agriculture that it began to put damaging pressure on the surrounding environment. The plethora of cattle, sheep, and other species competing for grazing land became a significant source of expansion. As increased

¹⁸ Cronon, *Changes in the Land*, 56.

populations of domesticated animals required more and more area for pasture, their owners were forced to clear more and more land:

The colonial interaction of forests, furbearers, hunters, axes, grazing animals, plows, crops, weeds—and the rival ways of owning and selling these things—all contributed to a redrawn map of New England. It was a map that, over the course of European settlement, more and more traced, not the earlier world of movement between hunt and harvest, but the new world of cropland and pasture, of agricultural cycles entrapped within the fixed boundaries of individual possession. In the hands of colonists, New England had become a world of fields and fences.¹⁹

Although this “world of fields and fences” was a drastic departure from the nomadic or hunter-gatherer lifestyles of many native communities, colonial agrarianism was still largely self-sufficient. Farming families could provide for themselves with little or no outside assistance. Farmers used production methods that protected the system from unforeseen weather events or pest outbreaks, and the family performed field labor with only occasional hired help or specialized equipment. Agricultural yields were modest yet stable.

From Subsistence to Commercialism to Industrialism.

The purpose of the American colonies, however, was to support their mother country, England. England expected the colonies to send them raw materials, as well as food and fiber products. Thus, many of the self-sufficient farming families who produced minimal surpluses were forced to increase their food production as urban markets grew, marking a turning

¹⁹ Cronon, *Changes in the Land*, 156.

point from a subsistence agriculture to a commercial agriculture.²⁰ In this new commercial agricultural system, the farm family no longer produced food primarily for itself, but rather for the market.

Essential to the commercial agricultural system was transportation. In order for England to reap the benefits of American crops and food products, a number of middlemen were required to link farmer and consumer. Hence, farmers increasingly relied on outside firms to process and transport their products to distant populations. These middlemen represented the first instances of specialization in the American food system, followed by companies that provided inputs such as credit and farm equipment to farm families.²¹ Thus the food system augmented from a simple “seed-to-plate” structure to a “firm-to-seed-to-middleman-to-plate” organism.

As the agricultural system became more complex, numerous enterprises formulated new ways to partake in the various stages of food production. An array of firms emerged for the purpose of linking farmer and consumer, who in turn became increasingly distant. However, over time the two processes of horizontal and vertical integration transformed the distribution of power among food system stakeholders. With fewer firms gaining greater control over the food system, capital resources also became progressively more concentrated among these firms. Thus, the twentieth

²⁰ Magdoff, Foster, and Buttel, *Hungry for Profit*, 77.

²¹ Magdoff, Foster, and Buttel, *Hungry for Profit*, 62.

century saw the transfer of capital and power from family farms to a more complex, industrial system of food production and distribution.

The addition of assorted middlemen to the food economy laid the foundation of a food supply chain revolution in the twentieth century U.S. The nation had already experimented with processing technology, such as giant roller mills and steam tractors, to increase yields in order to feed larger markets. However, food producers adopted a 'Fordist' mentality in the early 1900s and began to replace more and more human and animal labor with heavy machinery. Thus, "agrichemicals replaced the hoe; feedlots replaced grazing; monoculture replaced smallholdings": America's commercial agriculture transmuted yet again into an industrialized system of plant and animal production.²²

With expanded use of mechanized power, farm production grew steadily from the 1920s to 1940s. With the aid of government grants and sponsored research after World War I, American agriculture integrated new technologies that allowed for more efficient farm management and a more unified food production system.²³ By mid-century, productivity per acre began to increase dramatically as commercial fertilizer consumption and the use of anhydrous ammonia became more common. In addition, the number of tractors surpassed the number of work animals on farms for the first time

²² Lang, Tim, and Michael Heasman, *Food Wars: The Global Battle for Mouths, Minds and Markets* (London: Earthscan, 2004), 139.

²³ Sims, Laura, *The Politics of Fat: Food and Nutrition Policy in America* (Armonk, NY: M.E. Sharpe, 1998), 49.

in 1954. With the help of the tractor and other technologies—the 10-foot plow, 12-foot row weeder, harrow, 14-foot drill, self-propelled combine and trucks—the production of one hundred bushels of wheat required only 6.5 labor-hours. A century prior, the same amount of wheat required between 250 and 300 labor-hours, illustrating the industrialization of agriculture in America and the subsequent upsurge in production.²⁴

Despite the incredible and rapid expansion of industrial agriculture, this growth did not come without marked environmental costs. Industrial agriculture could not have come to dominate the American food system if it were not for the spread of fossil fuel culture, or what author Thomas L. Friedman terms the “Dirty Fuels System,” characterized by

fossil fuels that were dirty, cheap, and abundant; wasteful use of those fuels for many years as if they could never run out; and unbridled exploitation of our other natural resources—air, water, land, rivers, forests, and ocean fisheries—as if they too were infinite.²⁵

While the Dirty Fuels System powered the machines that provided for the industrialization of agriculture and processing, it also contributed to the United States’ continued overdependence on fossil fuels by favoring large farm size, specialized production, crop monocultures, and mechanization.²⁶

Retailing Industrialization. As the agriculture and processing sectors of the food system evolved into an industrial economy, the retailing

²⁴ Growing a Nation: The Story of American Agriculture. “Historical Timeline—Farm Machinery & Technology.” Accessed March 24, 2013.

http://www.agclassroom.org/gan/timeline/farm_tech.htm

²⁵ Friedman, Thomas L., *Hot, Flat, and Crowded: Why We Need a Green Revolution—And How It Can Renew America* (New York: Picador, 2008), 219-220.

²⁶ Magdoff, Foster, and Buttel, *Hungry for Profit*, 78.

industry followed suit in the second half of the twentieth century. In order to attract the attention of consumers, various firms developed new ways of packaging, distributing, selling, and preparing food. By 1996, only 20 percent of food expenditures went to food producers, while a whopping 80 percent constituted added value—labor, packaging, transportation, advertising, and other links in the increasingly complex food web. That same year, U.S. manufacturers added 13,600 new food products to the existing 240,000 packaged goods; most of these products took the form of candies, condiments, breakfast cereals, and beverages.²⁷

This industrialization of the retail side of the food economy transformed the food marketplace and prompted crucial changes in the food supply chain. Particularly during World War II, the food system felt added pressure to mass-produce and transport food overseas to American troops; this pressure persisted even after the end of the war, and the food industry boomed.²⁸ Although food system changes ranged in nature—the way food was grown, the methods by which animals were reared, the means by which food was processed—they all shared a common goal of productivity. In this new industrial food system more than ever, the core motivation of American food policy lay in profit-making.

²⁷ Lang and Heasman, *Food Wars*, 139-140.

²⁸ Sims, *The Politics of Fat*, 50.

Thinking in the Short-Term

Politics of the United States Food System. An intricate web of political structures and policies is responsible for the American food system's deterioration into a failing economy that erroneously values productivity over sustainability. Political institutions that support an economy that is far too short-sighted and profit-driven have contributed to this failure.

The industrial revolution and the development of industrial cities in the early twentieth century expanded the urban market that rural farmers were supplying, prompting government policy that pushed farmers to produce more and more food with less and less labor. As discussed, these policies encouraged a shift from a subsistence agriculture to a commercial agriculture in which farmer and consumer became increasingly distant. This increased distance added several more stages to the former "seed-to-plate" integrated food system—the distributors that retailed agricultural chemicals and fertilizer, the middlemen that transported food, and the supermarkets that sold food and food products all represent these added stages.

As the food system became more complex, the two processes of horizontal and vertical integration began to alter the power relations among firms involved in the food economy. Fewer firms accumulated more and more of the system's capital resources; with increased capital resources, these firms tightened their grip on the overall system. Over time, the

American food system saw the growing strength of a few powerful firms and the subsequent decline of the traditional family farm structure.²⁹

Capital Concentration. In the early stages of America's commercial agricultural system as farmer and market grew increasingly distant, farmers faced major problems in the transportation of their products from field to far-off urban markets. Seeing opportunity in their dilemma, the government subsidized the construction of railroads to aid in the transportation of goods and, in so doing, supported the budding industrialization of the American food economy.

Railroad construction may have provided farmers with a means of transport for their crops, but it also created a stark imbalance in economic power between the farming and railroad industries that plainly favored the railroad. Whereas individual farmers were usually dependent on just one railroad to ship their products to market, railroads conducted businesses with thousands of farmers. Thus, railroads were never dependent on any one farmer and represented one of the first instances of monopoly in the food economy. As a monopolistic power, the railroads could take advantage of farmers from this position of pronounced economic clout.³⁰

Horizontal Integration. As the food system became more specialized during its commercial stage, some food firms' profits allowed

²⁹ Magdoff, Fred; Foster, John Bellamy; and Buttel, Frederick H. *Hungry for Profit: The Agribusiness Threat to Farmers, Food, and the Environment* (Monthly Review Press: New York, 2000), 61-62.

³⁰ Magdoff, Foster, and Buttel, *Hungry for Profit*, 63-64.

them to expand operations by way of new facilities, acquisitions, and mergers. The firms that chose to expand but stay within the same stage of the food system thereby concentrated capital and control through the process of horizontal integration. While horizontal integration certainly offered immense benefits to the integrating firms, turn-of-the-century instances of horizontal integration in some commodity sectors were met with considerable backlash. For example, conspiring to set monopoly prices that took advantage of consumers, the firms Wilson, Armour, and Swift exercised significant control of beef slaughtering and processing in the early 1900s.³¹ Once the general public caught wind of their collusion, however, policy makers responded with the creation of the Packers and Stockyards Agency of the U.S. Department of Agriculture (USDA), which “promotes fair business practices and competitive environments to market livestock, meat, and poultry...and guards against deceptive and fraudulent trade practices that affect the movement and price of meat animals and their products.”³²

Vertical Integration. In spite of the formation of protective agencies and the ratification of related legislation, firms continued to consolidate and centralize capital with a second strategy: vertical integration. Like horizontal integration, vertical integration allows a firm to accumulate economic power, but the vertical version involves a firm’s

³¹ Magdoff, Foster, and Buttel, *Hungry for Profit*, 64.

³² United States Department of Agriculture. “Grain Inspection, Packers & Stockyards Administration.” Accessed March 10, 2013. <http://www.gipsa.usda.gov/psp.html>

ownership and control of several stages in the commodity system. For instance, the multinational corporation Cargill is involved in three essential stages of livestock production. Not only is Cargill a major trader of grain—a crucial ingredient in animal feed—but it also produces animal feed and processes hogs and beef.³³ By involving itself in three major stages of production, Cargill maintains a tight grip on the overall hog and beef industry.

Together, horizontal and vertical integration have encouraged the concentration of capital among only a handful of firms. Today a mere twenty feedlots feed half of the cattle in the U.S., most of which are then transferred to one of the four processing firms that control 81 percent of beef processing.³⁴ As noted in Figure 7 below, the four leading U.S. beef packers controlled 83.5 percent of their industry in 2005, representing over a ten percent increase in market control over just fifteen years. The beef industry provides just one example of the unprecedented power of a relatively small number of firms that have come to dominate the U.S. food system.

³³ Magdoff, Foster, and Buttel, *Hungry for Profit*, 69.

³⁴ Lang and Heasman, *Food Wars*, 144.

CR4 is the concentration ratio (relative to 100%) of the top four firms in a specific food industry.

BEEF PACKERS		CR4 = 83.5%*						
		<u>Daily Slaughter Capacity**</u>		Historical CR4				
				1990	1995	1998	2000	2005
1. Tyson	36,000 head			72%	76%	79%	81%	83.5%
2. Cargill	28,300 head							
3. Swift & Co.	16,759 head							
4. National Beef Packing Co.	13,000 head							

Fig. 7: Concentration of Agricultural Markets—Beef Packers, 2006³⁵

Farm Subsidies. The economic downturn of the Great Depression of the 1930s proved especially difficult for farmers. Hence, the U.S. government attempted to compensate for farmers’ losses by offering price supports and compensation for crops.³⁶ Although they were originally intended to provide temporary assistance, some of these federal support systems are still alive and well. The Food, Conservation, and Energy Act of 2008 covers a range of programs, including federal agricultural support in the form of subsidies and crop insurance programs. The bill provides several billions of dollars per year in automatic payments to growers of certain commodity crops, which in turn makes those crops cheap to grow and encourages their overproduction.

Of the \$277.3 billion in subsidies allotted from 1995 to 2011, only ten percent of farms collected 75 percent of those subsidies, meaning that only a select number of crops were subsidized and made affordable to grow,

³⁵ Hendrickson, Mary and William Heffernan. "A Concentration of Agricultural Markets," Department of Rural Sociology—University of Missouri-Columbia (2007), 1.

³⁶ Sims, *The Politics of Fat*, 49.

process, and distribute.³⁷ The most notorious subsidized crop is corn; its relative cheapness has led to the proliferation of corn-based products both in animal feed and in the production of an array of processed foods.

Between 1985 and 2010 the price of beverages sweetened with high-fructose corn syrup dropped 24 percent, and by 2006 American children consumed an extra 130 calories a day from these beverages. Over the same period the price of fresh fruits and vegetables rose 39 percent. For families on a budget, the price difference can be decisive in their food choices.³⁸

³⁷ Environmental Working Group. "Farm Subsidies." Accessed April 12, 2012. <http://farm.ewg.org/region.php?fips=00000&statename=theUnitedStates>

³⁸ "For a Healthier Country, Overhaul Farm Subsidies." *Scientific American*. May 2012.

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Ethics of the United States Food System. Despite the abundance of food in America, many communities face significantly lower access to healthy food because of the flawed political structure of the food system that fails to reflect the true prices of certain commodities. These disadvantaged communities signify the failures of America's flawed food system.

With the help of federal subsidization, the processes of horizontal and vertical integration in the agricultural sector have positioned a handful of corporations between thousands of producers and millions of consumers in the U.S. These firms thus sustain "a disproportionate amount of influence on the quality, quantity, type, location of production, and price of the product at the production stage and throughout the entire system...[Few] firms...have sufficient capital to face the economic power of these...firms."³⁹ Given unique "efficiencies," these few firms operate under market conditions that are largely within their own power. Consequently, market forces no longer dictate price—agribusinesses do.⁴⁰ As Figure 7 illustrated, the second half of the twentieth century has seen the development of highly distorted markets that simply cannot be considered free. If patterns of production persist, the U.S. food system will continue to exist as an environmentally and socially

³⁹ Magdoff, Foster, and Buttel, *Hungry for Profit*, 66.

⁴⁰ Carolan, *The Real Cost of Cheap Food*, 198-199.

damaging organism that values productivity—via misallocated farm subsidies, crop monocultures, and fossil fuel-dependent technologies—over sustainability.

Fighting for Food Justice. One of the most alarming ironies of today’s highly productive food system is that in the midst of record-breaking quantities of food, hunger, malnutrition, and diet-related diseases constitute a national public health crisis. Misplaced agricultural subsidies have nourished a food system in which low-income and racial-minority communities face the combined problems of limited access to expensive, healthy food and an excess of access to cheap, unhealthy food.⁴¹ The food justice movement, however, aims to improve the way food is grown, transported and distributed. Advocates of food justice recognize that

the domination of agriculture by a handful of corporations has meant that local communities have increasingly lost the ability to control access, affordability, and safety of their own food supplies. The adverse economic and social consequences of the dominant corporate model of agriculture have undermined the well being of communities of color everywhere.⁴²

⁴¹ Pena, Devon G. “Environmental justice and sustainable agriculture,” 17.

⁴² Pena, Devon G. “Environmental justice and sustainable agriculture: Linking ecological and social sides of sustainability.” *Second National People of Color Environmental Leadership Summit Resource Paper Series* (2002): 3.

Conclusion: Improving Corporate Outlook

The United States' food system has experienced fundamental transformations over the course of the nation's history, shifting from subsistence farming to commercialism to today's industrialism. As it exists, industrial agriculture in America cannot carry on if it upholds its focus on productivity rather than sustainability. Because food system problems are principally systemic issues, the U.S. must implement systemic solutions, starting with a change in the way agribusiness views and treats the food economy.

Despite awareness of the environmental and social issues associated with today's food system, most agribusinesses cling to a "business as usual" outlook, so they maintain old practices with no seeming interest in progress that is not primarily economic. As long as they continue to reap profits, they do not perceive a need to change their practices. However, in a world with limited resources, this attitude is not sustainable.

In *Capitalism at the Crossroads: Next Generation Business Strategies for a Post-Crisis World*, author Stuart L. Hart argues that corporate business—even more so than government or civil society—has the most potential to create a more sustainable world.

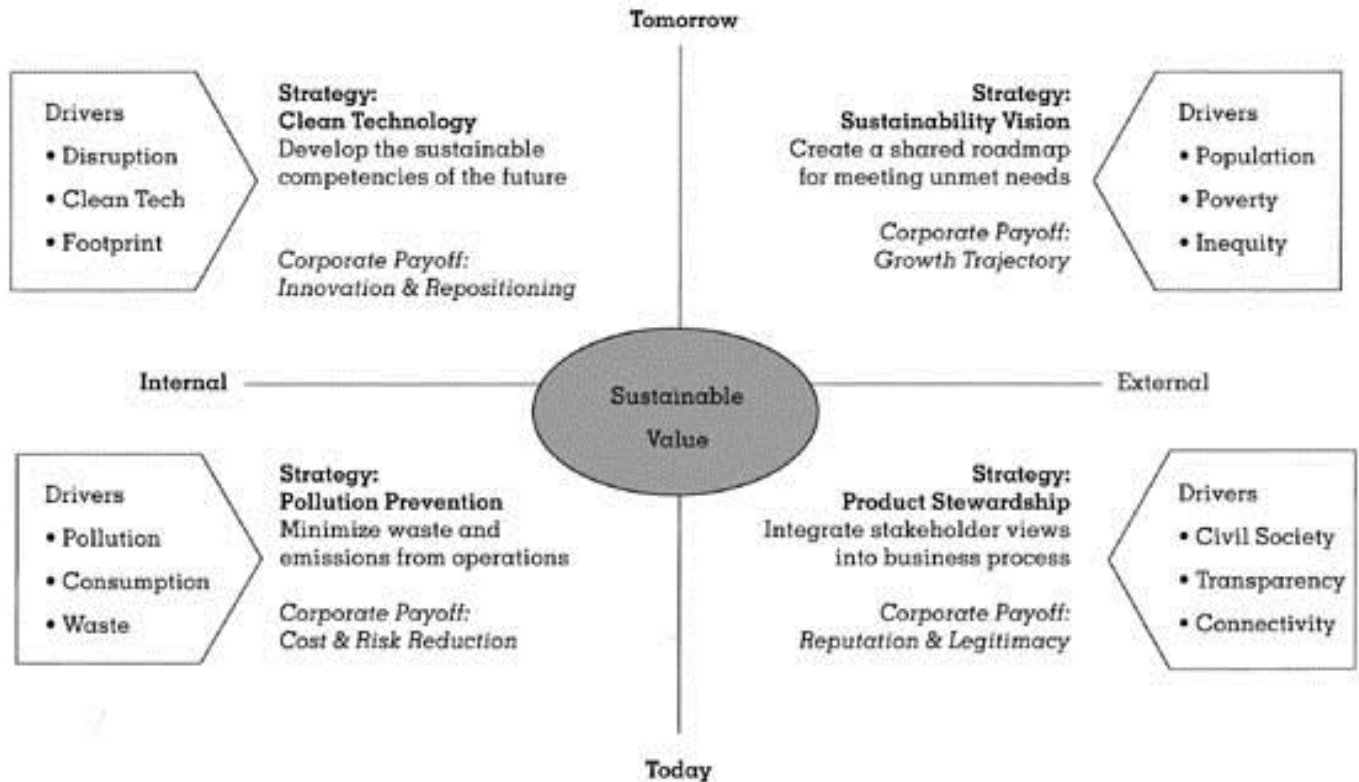


Fig. 8: The Sustainable Value Framework, Stuart L. Hart⁴³

Hart’s Sustainable Value Framework in Figure 8 provides a guide for companies to become more environmentally and socially sustainable. Moving beyond marginal analysis, this framework promotes a more “whole systems” approach. By adopting this “whole systems” thinking, corporations can change the way they see the world in which they hold so much power. Rather than seeing environmental and social concerns as costly obligations, agribusiness should incorporate these concerns into their business models. Furthermore, as Figure 8 suggests, instead of focusing on greening alone,

⁴³ Hart, Stuart L. *Capitalism at the Crossroads: Next Generation Business Strategies for a Post-Crisis World* (Upper Saddle River, NJ: Prentice Hall, 2010), 88.

businesses should consider less obvious ways to improve the food system and make decisions in terms of their effect on the entire food economy.

Over time, if American agribusinesses can embrace long-term, “whole systems” thinking, they can also adopt technologies and practices that promote a healthy, sustainable food system. Thus, agribusinesses will find that profits need not be their sole concentration; indeed, people, planet, and profit can go hand in hand.

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