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A Revised Land Ethic: Sustainable and Spiritual Agriculture

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A Revised Land Ethic: Sustainable and Spiritual Agriculture

Brooke Parrett

Abstract

This paper proposes a return to the land and reconnection of spiritual practices through ethical teachings. Such a land ethic would involve answering the woes of industrial agriculture and providing a framework for farmers, consumers, and policymakers based on sustainable and spiritual considerations of the land. I analyze the loss of spiritual literacy and traditional ecological knowledge in the United States and discuss the spiritual history of agriculture in order to analyze contemporary religious perspectives on farming and agricultural ethics and thereby develop my own recommendations. The land ethic I propose combines sustainability and spirituality to develop intrinsic respect for the land that is currently absent. For many communities, the land is sacred as a life giver. Reconnecting communities back to the land is necessary not only in order to follow the principles necessary for sustainable agriculture, but to transcend commodified environmentalism into an intrinsic ethical and spiritual framework.

Chapter 1 uses the Millennium Ecosystem Assessment to discuss the loss of spiritual literacy and traditional ecological knowledge in the context of the environmental degradation caused by industrial agriculture. Chapter 2 explores the spiritual history of agriculture. Chapter 3 analyzes spirituality in food production and consumption. Chapter 4 considers different agrarian philosophies and the ethics of factory farming. Using the statistics and critical analysis in Chapters 1 through 4, I then discuss my proposal for a new land ethic based on spiritual sustainable farming and my specific policy recommendations. Drawing upon the research and analysis from previous chapters, Chapter 5 will include a concrete plan for a community based on spirituality and sustainability.

Keywords: climate change, industrial agriculture, ecological theology, land ethic, sustainable farming, environmental worldviews, spiritual farming

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Introduction. Food, Community, Spirituality, and the Land

Food is the fulcrum of community, an essential aspect in forging human connection. The processes of procuring, preparing, and consuming food have long been essential in spiritual gratitude for life provided by earth. “Breaking bread” is a practice with longstanding connotations of affirmation within communities along with the more obvious connection to Christianity. For the past few centuries, humans have disconnected themselves from the land, influencing many hosts of problematic environmental worldviews and issues. This essay will consider sustainable agriculture through the lens of history, theology, and philosophy. I will critique the environmental degradation caused by industrial agriculture in favor of my model of sustainable agriculture based on ethical treatment of the land and a spiritual connection to food. Over the span of a few hundred years, a blink of an eye on the geologic time scale, agricultural processes have changed greatly. The rise of industrial agriculture under petrocapiatalism has disrupted earth’s natural systems and our diets. In this essay, sustainable agriculture is defined as:

an integrated system of plant and animal production practices having a site-specific application that will over the long term satisfy human food and fiber needs, enhance environmental quality and the natural resource base upon which the agricultural economy depends, make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls, sustain the economic viability of farm operations, [and/or] enhance the quality of life for farmers and society as a whole.¹

¹ 7 U.S.C. § 3103 (2010)

The early beginnings of agriculture, and the domestication of grains became the reason it was possible for early humans to settle down and build civilizations, thus moving farther away from hunter-gatherer societies. Early forms of agriculture afforded primordial civilizations a surplus of food, allowing for attention to be put elsewhere such as politics, art, and science. One could argue that the development of an agricultural system made room for the rise of modern society. However, since the period of industrialization, the earth has been plagued by rampant environmental abuse largely due to extractivist industries. One of the largest contributors to these problems is industrial agriculture. Monoculture, the practice of growing single crops, is the main outcome of the prevalence of industrial agriculture. Part of the problem with monoculture lies in that it relies heavily on chemical synthetic fertilizers. After growing the same crop year after year, the soil nutrients are completely depleted. “Much of industrial monoculture's harvest goes to feed livestock in concentrated animal feeding operations, or CAFOs, where they are fed a high-calorie, grain-based diet, often supplemented with antibiotics and hormones, to maximize their weight gain. Their waste is concentrated and becomes an environmental problem, not the convenient source of fertilizer that manure can be for more diverse, less massively scaled farms”.² Industrial agriculture distorts the natural systems able to support farming on a smaller scale.

As Aldo Leopold famously said, “[there] are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace”.³ This is reflective of the culture Americans live in today. Most people

² "Industrial Agriculture." Union of Concerned Scientists, accessed December 19, 2018, <https://www.ucsusa.org/our-work/food-agriculture/our-failing-food-system/industrial-agriculture#.XBqUTc9Ki9Y>.

³ Aldo Leopold and Charles Walsh Schwartz, *A Sand County Almanac* (London: Oxford University Press, 1968), 15.

go to the supermarket with limited knowledge of the systems of food production. Producing food more sustainably means greater food security and an opportunity for greater food justice. Recent technological advances have allowed hydroponic agriculture to become a viable solution for the future. Growing crops without soil offers a fantastic solution to urban agriculture in the form of vertical farming due to its efficient use of space.⁴ Although these technological advances are vital to the future of sustainable farming, it is also extremely important to foster a connection to the earth and its life cycles in order to fully commit to a sustainable mindset.

I propose that through ethical and spiritual considerations of sustainable agriculture, we will find ourselves reconnected to the land, thus saving much environmental degradation and change the structure of society today. Sustainable agriculture has grown in popularity through the years, but in order to bring back a spiritual connection to the land, ethical guidelines need to be put in place. Chapter 1 of this paper will lay out the foundation of the quantitative data on the damaging effects of industrial agriculture on the natural environment and the loss of spiritual literacy. Chapter 2 will explain the spiritual history and development of agriculture. Chapter 3 will lay out different theological frameworks through which to better understand the importance of food production. Chapter 4 will compare different forms of agrarian ethics in order to lay out my own recommendations for policy and offer a framework of spiritual and ethical sustainable agriculture.

Chapter 1. *Environmental Degradation and Loss of Spiritual Literacy*

Industrial agriculture degrades the natural world as we know it. In addition to releasing greenhouse gases into the atmosphere, unmitigated forms of large-scale farming also contribute

⁴ Tyler G. Miller and Scott Spoolman, *Living in the Environment: Principles, Connections, and Solutions* (Belmont, CA: Brooks/Cole Publishing, 2011), 42.

to environmentally degrading effects such as topsoil erosion, habitat destruction, and water pollution. Human populations have sustained themselves for thousands of years through providing natural capital in the form of food via organized sowing and reaping. Natural capital can be defined as the resources of the earth that allow goods and services to support life. Intricately linked to natural capital are ecosystem services. Ecosystem services “are the benefits people obtain from ecosystems”.⁵ This includes provisioning services such as food, water, and raw materials); regulating services like air quality regulation, carbon sequestration, and wastewater treatment; cultural services in the form of recreation, aesthetics, and spiritual value); and finally, supporting services, for example, habitat, nutrient cycling, and photosynthesis.⁶ These ecosystem services are inextricably linked to human well-being because our species could not survive without such services. The foundations for human well-being are:

basic material for a good life, (food, shelter, clothing, and access to goods); health, feeling well and a healthy physical environment clean air and access to clean water); good social relations (social cohesion, mutual respect, and the ability to help others and provide for children); security, including secure access to natural and other resources, personal safety, and security from natural and human-made disasters; and freedom of choice and action.⁷

Ecosystem services have enormous impact and value, providing the basis for human well-being and act as drivers of change. Ethically speaking, nature is intrinsically valuable. However, it is important to note that natural systems offer us services and natural capital, without which human life would not be what it is today.

⁵ Walter V. C Reid, *Ecosystems and Human Well-being: General Synthesis* (Washington, DC: Island Press, 2000), v.

⁶ Ibid.

⁷ Ibid.

Many Americans don't know where their food comes from, where it's been or how it's been treated because petroculturalism requires participation in a culture so far removed from food production. Industrial agriculture has an enormous ecological footprint, but "[the] reality is that only 30 percent of the food that people eat comes from large-scale industrial farms. The other 70 percent comes from small-scale farmers working on small plots of land. Meanwhile, industrial agriculture accounts for 75 percent of the ecological damage being done to the planet. These figures are routinely ignored, hidden, and denied, and the myth that industrial agriculture feeds the world is promoted worldwide".⁸ Life as we know it is inseparable from the agricultural systems that provide us with food and a sense of place. Industrial agriculture misuses and degrades land and water sources, emits enormous amounts of greenhouse gases, and pollutes the earth. Without question, industrial agriculture operates in a system that pollutes the services and benefits people obtain from ecosystems. "These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth".⁹ Greenhouse gas emissions, water use, land use, and pollutants are major determining factors in the environmental impacts of sustainable versus unsustainable agriculture. In a global context, the Millennium Ecosystem Assessment claims that "approximately 24% of Earth's terrestrial surface is occupied by cultivated systems...as the demand for food, feed, and fiber has increased, farmers have responded by expanding the cultivated area, intensifying production, or both".¹⁰ Given

⁸ Vandana Shiva, *Who Really Feeds the World?: The Failures of Agribusiness and the Promise of Agroecology* (London: Zed Books, 2016), xii.

⁹ José Sarukhán, and Joseph Alcamo, *Ecosystems and Human Well-being: A Framework for Assessment*, (Washington, DC: Island Press, 2003).

¹⁰ Rashid Hassan, Robert Scholes, and Neville Ash, *Ecosystems and Human Well-being: Current State and Trends* (Washington, D.C.: Island, 2005), 747.

increases in population and therefore urban (and even suburban sprawl) and desertification, the viability for more farmland is extremely limited. Water and land use, greenhouse gas emissions, pollution, and animal agriculture are aspects of factory farming that impact both provisionary and cultural ecosystem services.

Water Use. One of the largest consumers of fresh water is for agriculture. As many garden enthusiasts know, cultivation demands large amounts of water. In order to produce one kilogram of potatoes, it takes 500 liters; for one kilogram of wheat, 900 liters; corn drinks up to 1,400 liters to produce one kilogram; and one kilogram of rice requires 2,000 liters.¹¹ “[Other] crops, such as sugarcane and bananas, are even more water-demanding”.¹² There are 9,000–12,500 cubic kilometers of surface water estimated to be available globally for use each year, however, in the year 1995, between 3,500 and 3,700 cubic kilometers were withdrawn. Of that total, about 70% was withdrawn for irrigation. According to the World Bank, the share of extracted water used for agriculture ranges from “87% in low-income countries to 74% in middle-income countries and 30% in high-income countries”.¹³ The problem with such immense water demands, aside from the risk of a water shortage, is that it can affect not only the quantity of water available, but the *quality* of water available. In terms of water quality, “agricultural impact on water quality is also mediated through erosion brought about by poor crop cover, field drainage, and cultivation operations, particularly on sloping lands. [It is estimated] that about 22% of the annual storage capacity lost through siltation of U.S. reservoirs is due to soil erosion from cropland. Water-borne transportation of chemicals such as nitrates and phosphates are quite common where external nutrients are applied in excess or inefficiently

¹¹ Hassan, Scholes, and Ash, 761.

¹² Ibid.

¹³ Ibid.

and can cause eutrophication of surface waters. In some countries, such as Belgium and the Netherlands, the nitrogen input to some crops has in the past exceeded 500 kilograms per hectare (Wood et al. 2000).¹⁴

Much of the cultivated land in the United States is irrigated because of the arid and semiarid conditions the commodities are grown in with naturally occurring low levels of precipitations. Much of the American produce comes from California, a state experiencing major drought in recent years. The state of California uses an immense amount of water to produce the vast agricultural commodities we require like avocados and almonds. “California uses 38 billion gallons of water per day, about two thirds of which goes to agriculture”.¹⁵ Groundwater depletion is a major source of concern for farmers. The Ogallala aquifer is an enormous source of fresh water in the US, spanning across eight state lines, however, it has been notoriously abused due to unsustainable water practices. This source of freshwater “provides more than 20 percent of all the water used by U.S. irrigation projects. The depletion rate for the Ogallala is about 12 billion cubic meters (bcm) per year...[and] the United States’ largest groundwater reserve has lost over 325 bcm of water that has not been replenished by nature. This staggering total equals the amount of water that would flow through the Colorado River over the course of 18 years”.¹⁶ Water is indispensable to human health and survival, for drinking, bathing, and also for producing the sustenance necessary for life.

Land Use. Land use has changed drastically over the past few decades on both a national and global scale. What was once in the hands of smaller farms owning and working their own land, has largely been pushed aside to make room for large scale industrial farms practicing mono or

¹⁴ Ibid.

¹⁵ Josh Tickell, *Kiss the Ground: How the Food You Eat Can Reverse Climate Change, Heal Your Body and Ultimately Save Our World*. (Enliven Books: New York, 2017), 85.

¹⁶ Mark Briscoe, *Water: The Overtapped Resource* (Island Press: Washington, 2002), 184.

duo cropping. Monocropping is the practice of cultivating only one plant species, such as corn, while duo cropping refers to the practice of farming two species and is common in large scale farms across the country. Largely dependent on demand, “meat [farming] may induce further changes in land use (e.g., from forestland to grassland), often increasing CO₂ emissions, and increased demand for animal feeds (e.g., cereals). Larger herds of beef cattle will cause increased emissions of CH₄ and N₂O, although the use of intensive systems (with lower emissions per unit product) is expected to increase faster than growth in grazing-based systems. This may attenuate the expected rise in GHG emissions”.¹⁷ Attitudes toward land development reflect the belief that when building a society, the land is as an obstacle or as a resource through which it must be cleared to make room for human civilization and domination. Rampant deforestation is a still a problem today, in fact, the destruction has escalated. Desertification can be defined as “the man-made destruction of the underlying soil resource to such a degree that it can no longer support agriculture. In very general terms this human induced phenomenon results from overcropping, overgrazing, and overusing land due to increased population pressure”.¹⁸ There are three connected yet unique phases in the desertification process, the first is disturbing the local water cycle, the second is increasing the heat of the ground and the air, and the third is topsoil erosion.¹⁹ “More than 23% of Earth’s landmass has been degraded by desertification and 1.5 billion people are affected”.²⁰ With populations projected only to increase, demands for food and land will both increase, and the current systems in place for industrial cannot afford room for both.

¹⁷ P. Smith, D. Martino, Z. Cai, et al, *Agriculture. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (New York: Cambridge University Press, 2007), 502.

¹⁸ Tickell, 91.

¹⁹ Tickell, 92.

²⁰ Tickell, 97.

Greenhouse Gas Emissions. It is not solely water quality and land use, however, that are affected by industrial agriculture. One of the largest qualms of industrial agriculture is the emissions of greenhouse gases. According to the Millennium Ecosystem Assessment, “agricultural systems emit carbon dioxide through the direct use of fossil fuels in field operations (such as tillage, harvesting, irrigation pumping, transport, and grain drying), the indirect use of embodied energy in inputs that require the combustion of fossil fuels in their production, and the decomposition of soil organic matter and crop residues”.²¹ Sustainable agriculture avoids health and environmental problems by addressing ecosystems as a whole, and small scale farms do not necessarily require the large machinery dependent on fossil fuels. Industrial agriculture and factory farming have proven to degrade the environment because these systems consume fossil fuel, water, and topsoil at unsustainable rates and contribute to numerous forms of environmental degradation, including air and water pollution, soil depletion, diminishing biodiversity, and fish die-offs. According to Horrigan, Lawrence, and Walker, “[sustainable] agriculture systems are based on relatively small, profitable farms that use fewer off-farm inputs, integrate animal and plant production where appropriate, maintain a higher biotic diversity, emphasize technologies that are appropriate to the scale of production, and make the transition to renewable forms of energy.”²² American industrial agriculture is inseparable from the roots of the oil industry, as agriculture on such a large scale has proved to be so dependent on the energy provided by fossil fuel.

²¹ Ibid.

²² Leo Horrigan, Robert S. Lawrence, and Polly Walker, “How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture.” *Environmental Health Perspectives*, 2002.

The average U.S. farm uses 3 kcal of fossil energy in producing 1 kcal of food energy (in feedlot beef production, this ratio is 35:1), and this does not include the energy used to process and transport the food. Fossil fuel energy is also a major input to industrial agriculture. The food production system accounts for 17% of all fossil fuel use in the United States, and the average U.S. farm uses 3 kcal of fossil energy in producing 1 kcal of food energy. The road from the farm to the dinner plate is an energy-intensive one because transporting, processing, and packaging our food require large amounts of fuel. For instance, before arriving at the Jessup (Maryland) Terminal Market, vegetable shipments travel, on average, about 1,600 miles and fruit shipments about 2,400 miles. Some estimated energy inputs for processing various foods are 575 kcal/kg for canned fruits and vegetables, 1,815 kcal/kg for frozen fruits and vegetables, 15,675 kcal/kg for breakfast cereals, and 18,591 kcal/kg for chocolate.²³

Food is never just food because the chains of food production are so heavily entrenched in extractivist industries. Purchasing agricultural commodities necessary for survival is one of the ways consumers are forced to participate in the petrocapiatist society that is environmentally destructive.

Pollution. The chemical pesticides and synthetic fertilizers that are used in agriculture are largely responsible for the pollution of our diets, sources of water, and soils. Most of the chemical makeup that occurs in fertilizers actually comes from naturally derived ingredients. Nitrogen and phosphorous are two elements that exist in nature and the principles of fertilizer systems attempt to mimic the natural processes conducive to agriculture. Biogeochemical cycles in the form of the carbon cycle, nitrogen cycle, phosphorus cycle, sulfur cycle, and hydrogen

²³ Ibid.

cycle. The systems that exist in nature are meant to absorb and repurpose the chemicals. Nitrogen is the most abundant element in the atmosphere and is integral to biogeochemical life. The nitrogen cycle is complex and occurs in several phases, and the first is nitrogen fixation. Through precipitation, nitrogen is deposited into soil and surface water where it forms ammonia (NH_4^+). Ammonia is very useful for plant life. After nitrogen fixation occurs, bacteria convert ammonia into nitrite (NO_2^-) and then nitrate (NO_3^-) in a process called nitrification. After nitrification occurs, nitrogen in various forms is retaken up from soils by plants as integral to the plant's ability to form proteins. The next phase after assimilation is ammonification, which occurs in the organic matter of deceased animals and animal waste. Microorganisms (decomposers) break down the organic matter produces ammonia. The nitrogen cycle is a closed loop system, so through the process of denitrification, nitrogen returns to the atmosphere when nitrate is converted back to nitrogen (N_2) in the form of gas.²⁴ The phosphorus cycle is also a closed loop system in which the element is cycled throughout the earth's systems. Important for the structure holding DNA and RNA together, phosphate (PO_4) is an element that life depends on. Unlike nitrogen, where the largest reservoir is in the atmosphere, phosphorus exists primarily in sedimentary rock. Through a process called weathering, phosphates are released from the rocks when it rains and are distributed throughout soil and water. Phosphates ions are able to be taken up by plants, and transfer to herbivores when they eat the plants, and carnivores when they eat the herbivores. Excretion of animal waste and decomposition of deceased animals is the final step in the cycle before the phosphorus is returned to the sedimentary rocks and the processes

²⁴ "Nitrogen Cycle", Environmental Literacy Council, Accessed May 6, 2019, <https://enviroliteracy.org/air-climate-weather/biogeochemical-cycles/nitrogen-cycle/>.

begin again.²⁵ Due to the extremely large scale of factory farms, however, the number of synthetic fertilizers in the system are unable to be taken up and this often leads to eutrophication.

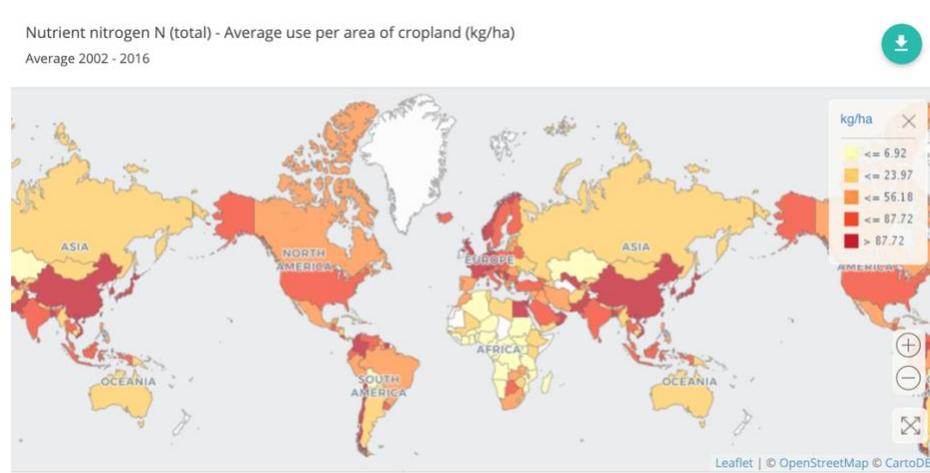


Figure 1: Average use per area of cropland. Source: UNFAO

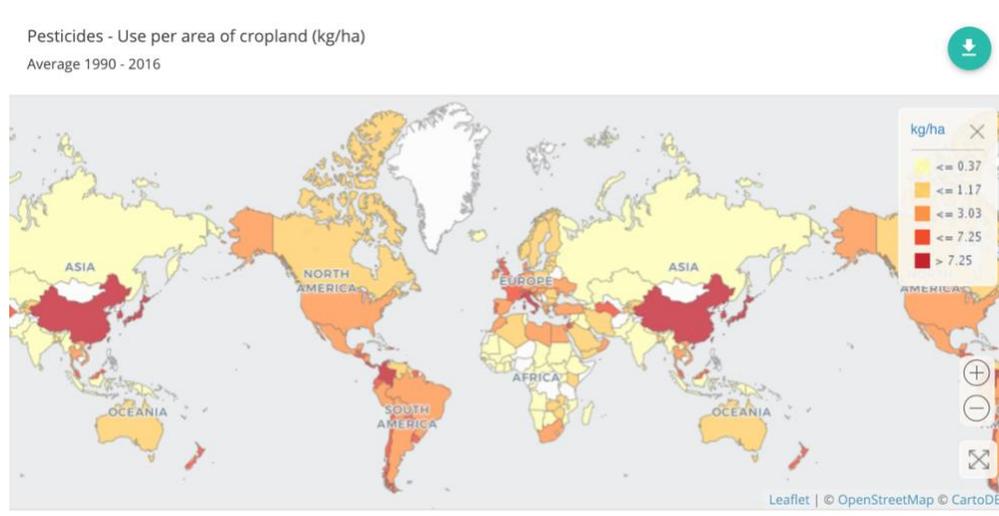


Figure 2: Pesticide use per area of cropland. Source: UNFAO

Synthetic fertilizers have enormously damaging effects on both human and environmental health. The Green Revolution saw fewer farmers managing larger acreages of

²⁵“Phosphorus Cycle”, Environmental Literacy Council, Accessed May 6, 2019, <https://enviroliteracy.org/air-climate-weather/biogeochemical-cycles/phosphorus-cycle/>.

land. The development of industrial agriculture and chemical fertilizers were largely impacted by both world wars. The Haber-Bosch process was a process through which Nitrogen was artificially fixated and became the main industrial procedure for producing ammonia. It was invented by German chemists Fritz Haber and Carl Bosch. "As soon as Haber's synthetic nitrogen was sprayed on crop fields it had an unintended side effect; synthetic nitrogen didn't just make crops grow big and strong, it also caused an explosion of weeds....To combat the weeds and pests, Haber concocted new poisonous chemical compounds that would come to be known as insecticides and pesticides".²⁶ The industrial complex following the period of World War II in the United States set the stage for rampant abuses of technology and the health of our bodies and the environment. "Today the United States sprays one billion pounds of herbicides, insecticides, and fungicides onto its crops annually. That's about three pounds per American per year".²⁷ Synthetic fertilizers and chemical pesticides are processes and businesses that are intimately linked. Industrial agriculture demands the high yields and efficiency made possible by synthetic fertilizers, and yet the outburst of weeds also commands enormous usage of chemical pesticides. Both of these common practices in agricultural practices have immensely damaging effects on the natural environment.

Animal Agriculture. The most unsustainable facet of industrial agriculture, however, is animal agriculture in the form of factory farming. Ethical considerations aside, data suggests that it is, in fact, animal agriculture that is the most damaging sector of agriculture. Eating meat, especially beef, is an inextricable part of American culture. Likewise, eating meat is synonymous with a higher standard of living in the first world. The demand for meat consumption is increasing as both population and global living standards increase. After fossil fuel emissions, animal

²⁶ Tickell, 51.

²⁷ Ibid, 70.

agriculture is the second largest contributor to greenhouse gases and is a leading cause of deforestation and biodiversity loss.²⁸

In order to accommodate the 70 billion animals raised annually for human consumption, a third of the planet's ice-free land surface, as well as nearly sixteen percent of global freshwater, is devoted to growing livestock. Furthermore, a third of worldwide grain production is used to feed livestock. By 2050, consumption of meat and dairy products is expected to rise 76 and 64 percent respectively, which will increase the resource burden from the industry. Cattle are by far the biggest source of emissions from animal agriculture, with one recent study showing that in an average American diet, beef consumption creates 1,984 pounds of CO₂e annually. Replacing beef with plants would reduce that figure 96 percent, bringing it down to just 73 pounds of CO₂e.²⁹

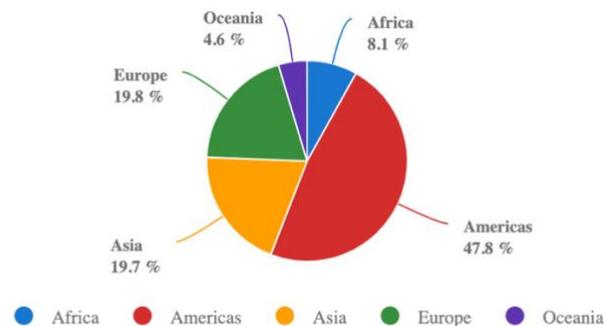


Figure 3: Production share of cattle by region. Average 1993-2017. Source: UNFAO.

²⁸ J. Pierre Gerber, *Tackling Climate Change Through Livestock*, (New York: FAO, 2013), 15.

²⁹ "Animal Agriculture's Impact on Climate Change", Climate Nexus, Accessed May 6, 2019, <https://climatenexus.org/climate-issues/food/animal-agricultures-impact-on-climate-change/>.

Moving forward, farming should be sustainable, based in equity, and reflect spiritual and ethical considerations of the land. Wendell Berry writes, “[a] community is the mental and spiritual condition of knowing that the place is shared, and that the people who share the place define and limit the possibilities of each other's lives. It is the knowledge that people have of each other, their concern for each other, their trust in each other, the freedom with which they come and go among themselves”.³⁰

Food Waste. Statistics on rampant food waste reflects how food is often seen as disposable and offers no source of value for the consumer. “An estimated one third of all food produced is globally is either lost or wasted”.³¹ This represents almost 1.3 billion tons, an immense amount of monetary value that is wasted, and huge amounts of greenhouse gas emissions. The United Nations Food and Agriculture Organization claims “30 percent of food is wasted globally across the supply chain, contributing 8 percent of total global greenhouse gas emissions. If food waste were a country, it would come in third after the United States and China in terms of impact on global warming”.³²

Loss of Spiritual Literacy. Farming provides humans not only with the provisioning service of sustenance, but also spiritual services. American society is largely based on a culture so far removed, both literally and figuratively from where their food comes from. Most produce travels hundreds, if not thousands of miles before it reaches the destination of the supermarket. This is why we can buy tomatoes (albeit sad looking and bland tasting), although tomatoes

³⁰ Wendell Berry, *The Long-Legged House* (Berkeley, CA: Counterpoint Press, 2012), 71.

³¹ “Key facts on food loss and waste you should know!” Food and Agriculture of the United Nations. <http://www.fao.org/save-food/resources/keyfindings/en/>.

³² Chad Frischmann, “The Climate Impact of the Food in the Back of Your Fridge”, *The Washington Post* (Washington D.C.) July 31, 2018, https://www.washingtonpost.com/news/theworldpost/wp/2018/07/31/food-waste/?utm_term=.1ec680b47628.

nonetheless, in the middle of January in New York City. Consumers are also figuratively removed from the food because children grow up believing that food comes from the grocery store, and not understanding the time consuming but awe-inspiring process of growing your own food. Because of industrial agriculture, we as American citizens, turn a blind eye to industrial agriculture and are doing themselves a major disservice. To quote the IPCC, “agriculture is directly responsible for about 20% of human-generated emissions of greenhouse gases”.³³

A sense of anxiety and insecurity surrounds the way Americans eat. Michael Pollan describes this as our national eating disorder, “[as] a culture we seem to have arrived at a place where whatever native wisdom we may once have possessed about eating has been replaced by confusion and anxiety”.³⁴ Pollan argues that this form of disordered consumption stems from an unstable culture of food. Nutritional data is weaponized by large scale food industries in order to exacerbate our concerns about the products we are consuming and the health of our bodies. There seems to be a never-ending cycle of what we, as consumers, are told we should and shouldn’t eat. Michael Pollan uses the term “dietary pendulum” to describe the kind of cyclical availability of nutritional wisdom that is meant to influence consumption habits. In 1977, “a Senate committee had issued a set of ‘dietary goals’ warning beef-loving Americans to lay off the red meat”.³⁵ High protein diets consisting largely of red meat were very prevalent until the rise in popularity of Dr. Atkins diets, promising “Americans the welcome news that they could eat more meat and lose weight just so long as they laid off the bread and pasta...It was not, as official opinion claimed, fat that made us fat, but the carbohydrates we’d been

³³ *Climate Change 2014: Impacts, Adaptation and Vulnerability* (Cambridge: Cambridge University Press, 2015).

³⁴ Michael Pollan, *The Omnivore’s Dilemma*, (New York, Penguin Press, 2006), 1.

³⁵ *Ibid*, 2.

eating precisely in order to stay slim”.³⁶ This also occurs on a more micro scale than the national pendulum of eating habits, as seen in the periodic crazes and trends in certain foods. Recently, kale and celery juice have been extremely popular and hailed as the solution to any and all of your health issues. All of these conditions often leave consumers bewildered in the supermarket; instead of empowered by the abundance of food, it actually leaves us paralyzed or experiencing choice fatigue.

Wendell Berry famously said, “eating is an agricultural act”.³⁷ Food can also be a political statement. There are three general food chains of production that sustain us today, industrial, organic, and hunter-gatherer. Although each system is different, “all three food chains are systems for doing more or less the same thing: linking us, through what we eat, to the fertility of the earth and the energy of the sun”.³⁸ This link itself is an incredibly powerful and sacred aspect of consuming food. Systems of food production, however, have lengthened the chains of our connection from our physical bodies to the fertility of the earth and the energy of the sun. “Industrial agriculture has supplanted a complete reliance on the sun for our calories with something new under the sun: a food chain that draws much of its energy from fossil fuels instead”.³⁹ This is an important point for consideration and shows how inextricable the relationship of food and consumption is. Industrial agricultural systems are heavily caught up in the world of heavy machinery dependent on fossil fuels for energy. This leaves us also even more dependent on such forms of energy, and even more disconnected from the land that feeds us.

³⁶ Ibid.

³⁷ Wendell Berry, *What Are People For?* (Berkeley: Counterpoint, 1990), 23.

³⁸ Ibid, 7.

³⁹ Ibid, 7.

A loss of spiritual literacy regarding how we look at food is certainly part of the rampant destruction of some of the ecosystem services to be discussed later in the chapter. Eating is a complicated act, with many far reaching and unintended consequences than buying a fast food sandwich for lunch. Pollan describes:

Daily, our eating turns nature into culture, transforming the body of the world into our bodies and minds. Agriculture has done more to reshape the natural world than anything else we humans do, both its landscapes and the composition of its flora and fauna. Our eating also constitutes a relationship with dozens of other species-plants, animals, and fungi-with which we have coevolved to the point where our fates are deeply entwined. Many of these species have evolved expressly to gratify our desires, in the intricate dance of domestication that has allowed us and them to prosper together as we could never have prospered apart. But our relationships with the wild species we eat-from the mushrooms we pick in the forest to the yeasts that leaven our bread-are no less compelling, and far more mysterious.⁴⁰

The food that we consume all stems from some naturally produced ingredient. "...Every edible item in the supermarket is a link in a food chain that begins with a particular plant growing in a specific path of soil somewhere on earth".⁴¹ In order to return to a certain connectedness to the land itself, humans must consider their dependency and the sacredness of the land itself.

Biocultural refugia: Protecting Traditional Ecological Knowledge. Traditional Ecological

Knowledge (TEK) refers to "...the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment. [TEK]

⁴⁰ Ibid, 10.

⁴¹ Ibid, 17.

includes the relationships between plants, animals, natural phenomena, landscapes and timing of events that are used for lifeways, TEK is an accumulating body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (human and non-human) with one another and with the environment”.⁴² Refugia are places in which previously abundant species have found safety during periods of insecurity.⁴³ Industrial agriculture promotes global food insecurity with poor management practices and irreparable environmental damage. In order to promote more sustainable land management and food security, it is vital to protect the TEK that is based in such a mindset. *Biocultural refugia* comes from authors Barthel, Crumley, and Svedin and is defined as “places that not only shelter species, but also carry knowledge and experiences about *practical management* of biodiversity and ecosystem services”.⁴⁴ An example is permaculture:

Since the agricultural revolution began around 10,000 years ago, small-holding farmers have experimented with the management of plants and animals important for their livelihood. Their solutions were “system-wide”: they thought about how vulnerability to shifting conditions could be reduced by maximizing useful connections between components of the broader landscape (e.g., fields, pastures, forests and woods, water resources, soils and external human settlements). In this sense, they practiced the central concept of permaculture (e.g., Graham, 1990), a focus on relationships created among elements.⁴⁵

⁴² “Traditional Ecological Knowledge: For Application by Service Scientists”, U.S. Fish and Wildlife Service, Accessed May 6, 2019, <https://www.fws.gov/nativeamerican/pdf/tek-fact-sheet.pdf>.

⁴³ Stephan Barthel, Carole Crumley, and Uno Sedin, “Biocultural refugia – Safeguarding diversity of practices for food security and biodiversity”, *Global Environmental Change*, (2013), 23.

⁴⁴ *Ibid*, 1143.

⁴⁵ *Ibid*.

Permaculture is an instance of sustainable land management practices in agriculture that also represent a traditional or spiritual component in regard to thinking of life as an entire intrinsic system, rather than a cycle of production and profit. The land has memory, and stewardship memory is a term meant to reflect the “different carries, or repositories, of biota as well as human experiences; knowledge and practices”.⁴⁶ Some of the carriers of stewardship memory are habits and rituals through communal ceremonies.⁴⁷ An instance of such a ritual is the practice of saving seeds for the next growing season. “[Over] the millennia locally adapted varieties of crops co-evolved with changing local environmental conditions and with values held by profitable farmers (Fraser and Rimas, 2010). Stewardship memories of fluctuating local environmental conditions and societal adaptations to them are carried forward through time by soils and locally adapted crops, by landraces, as well as by embodied ceremonies and rituals, oral traditions, written material, and by self-organized systems of rules”.⁴⁸ These traditions in practical land management in agroecological communities are being largely pushed out with the gaining power and popularity of industrial agriculture. Large scale industrial agriculture emphasizes efficiency in the context of urbanization and the global economy. Standardization of practices, especially the monotony of monocropping reflect a worldview devoid of spiritual considerations of the traditional knowledge contained and spread through the land.

Chapter 2. *Spiritual History of Farming*

Introduction. Food production is an aspect of modern society that is often taken for granted.

This chapter will trace the history of agriculture from its earliest beginnings to the vertical farms of today. The image of the idyllic American farm is deeply engrained in the collective conscious

⁴⁶ Ibid, 1144.

⁴⁷ Ibid.

⁴⁸ Ibid.

of the American people. But how much of the bucolic imagery of the big red barn, rolling fields, and happy animals strolling about is actually true to form? It is debatable *when* the agricultural crisis began, but it is without question that we are in the midst of a crisis now.

Roots of Agriculture. Early iterations of agriculture provided a food security that has paved the way for a flourishing modern society. With a food surplus came extra time allocated towards developing a foundation for a culture we are familiar with today in the form of governance, taxation, and leisure. Anthropologist Jared Diamond describes the emergence of agrarian societies as follows, "history followed different courses for different peoples because of differences among peoples' environments, not because of biological differences among peoples themselves".⁴⁹ The first civilizations in the Middle East were able to flourish because their climate allowed for the domestication of barley and wheat. The food surpluses of early forms of agriculture allowed for increased populations because societies were able to support and feed more people. There was, however, a vicious circle in which more mouths to feed meant there was also a need for more hands in the field and a reduction in spacing between child birth.⁵⁰ A food surplus meant more food available for more people, supporting growing populations. However, the production of food itself demanded a larger population for plowing, tilling, and sowing. Moving away from hunter-gatherer societies and towards a more settled lifestyle meant a food production on this kind of scale that required pretty extensive organization, and this is how city states arose. Grains such as barley and wheat were essential to this process; because they could be so easily counted, they became the basis for the first forms of taxes.

⁴⁹ Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton & Company, 2017), 13.

⁵⁰ Yuval Noah Harari, *Sapiens* (New York: Harper, 2014), 107.

Farmers quickly displaced hunter-gatherers, but not because farming was more efficient or less laborious. Scientists now think it took longer to grow food than it did to find it, and farmers were far more vulnerable to drought. Contributing to the displacement of hunter-gatherers was population differences between the two groups. Farming communities had a population more numerous than hunter-gatherers, and if the territory of the hunter-gatherers was fertile, the farmers took their land by force of arms. The story of hunter-gatherers since the beginning of agriculture is one of increasing marginalization. The story of the development of food production is one of human conquest over nature, domesticating crops and animals, patterning the landscape, and wiping out any other humans or animals that got in their way. These are the foundations of modern civilization and the future of industrial agriculture.

Neolithic (First) Agricultural Revolution. Domestication is the hallmark of the beginnings of agriculture. The centers of origin of the Neolithic agricultural revolution can be defined by their domestication of plant and animal species. These geographical areas are known as the “Near Eastern center, Central American center, Chinese Center, New Guinean center, South American center, and North American center”.⁵¹ In North America, “the swamp elder, squash, sunflower, and goosefoot were domesticated” but on a seasonal basis that were cleared by spring floods.⁵² These crops were a secondary source of food “that simultaneously exploited important resources from the aquatic environment and continued their nomadic way of life”.⁵³ Even thousands of years ago, the exploitation of water was still an unfortunate prevalence. It wasn’t until much later (250 BCE and 200 CE) that life became more sedentary and reliant on domesticated grains such as “knotgrass, small barley, and a type of millet...North American agriculture made us of seven

⁵¹ Marcel Mazoyer and Laurence Roudart, *A History of World Agriculture: From the Neolithic Age to the Current Crisis* (New York: Monthly Review Press, 2006), 85.

⁵² Ibid.

⁵³ Ibid.

cultivated plants, which provided around two-thirds of the diet for settled farmers, who used axes, hoes, grinding stones for grains, pottery, and silos”.⁵⁴ Several centuries later, maize arrived from Central America, and it would soon quickly become the most influential cultivated species. Perhaps most well-known is the Near Eastern center, otherwise known as the fertile crescent. This area is commonly referred to as the cradle of civilization. Domestication is the hallmark of the Neolithic revolution, with selective breeding a major part of cultivation. Seeds were sowed in order to produce a more desirable crop. In the case of animals, domestication lead the way for current factory farming today. “To take a wild animal population away from its natural mode of life in order to save it, protect it, and propagate it with a view to exploiting it more easily and intensely is exactly the principle of proto-animal breeding”.⁵⁵ There were many factors that led to the Goldilocks conditions of this area; the abundance of resources, increase in sedentary lifestyles, specialization of tools, intensified exploitation of the environment, proto agriculture, domestication, increase in time required for predation and transition, social and cultural conditions were all major reasons that a new form of life was able to sprout through agriculture.

Early Forms of Agriculture. “As J.R. Harlan has written, ‘agriculture was neither discovered nor invented.’ In the current state of knowledge, it appears as the result of a long evolutionary process that affected several societies of *Homo sapiens sapiens* at the end of prehistory, in the Neolithic epoch”.⁵⁶ Pre-modern agriculture in Europe was based upon the following types of agriculture: temporary, slash and burn cultivation, fallowing and cultivation using the ard (plow), and fallowing and cultivation using the plow.⁵⁷ These methods were used well up until they were replaced in favor of pastures and fodder roots that were rotated. What is most important in this

⁵⁴ Ibid, 86.

⁵⁵ Ibid, 96.

⁵⁶ Ibid, 98.

⁵⁷ Ibid, 313.

development is that it paved the way to raising animals. “The development of these rotations went hand in hand with the development of raising herbivores, which supplied more animal products, draft power, and manure. This increase in animal manuring led, in turn, to a strong growth in cereal yields and made it possible to introduce other crops, which have higher fertility requirements, into the rotations”.⁵⁸ Early forms of agriculture and domesticating animals were based on a reciprocal relationship between the two. The rise of pastoral animal herding is decisive in its influence on animal farming and domestication. “Cereal crops are concentrated on the most fertile arable lands where they alternate with the natural growth of grass during a fallow period...the livestock exploit the... pastures and play a role in fieldwork and in the reproduction of the fertility of the cultivated lands”.⁵⁹ There were three main agricultural revolutions up to this point, the Neolithic, the ancient, and the medieval. Such revolutions allowed for different types of cultivation: “systems of temporary, slash-and-burn-cultivation; systems based on fallowing and cultivation using the ard; and systems based on fallowing and cultivation using the plow”.⁶⁰ This allowed for the productivity of both the production of crops and production of livestock to be drastically increased. Raising herbivores soon became inseparable from the productive and efficient rotations of cereal grains. “The development of these rotations went hand in hand with the development of raising herbivores, which supplied more animal products, draft power, and manure. This increase in animal manuring led, in turn, to a strong growth in cereal yields and made it possible to introduce other crops, which have higher fertility requirements into the rotations”.⁶¹ Early farmers in this revolution were able to grow more and different kinds of food (turnip, cabbage, potato, corn) that changed their diets for the better. Not only was there more of

⁵⁸ Ibid, 313-314.

⁵⁹ Ibid, 218.

⁶⁰ Ibid, 313.

⁶¹ Ibid, 314.

a varied diet, this system produced at least twice as much food as previous systems.⁶² An increase in productivity and food surplus meant that “from the end of the nineteenth century, more than half of the active population in the industrialized countries could devote themselves to rapidly developing nonagricultural activities, such as mining, industry, and services”.⁶³ Advanced productivity in food cultivation meant more security and the ability to develop culturally.

Loss of Nature and Rise of Industry. Between the years 1500 and 1700, a great shift in the cultural conscious of Europe took place. Moving away from feudal systems to capitalism, this period paved the way for practices of industrial agriculture today. Preindustrial agriculture, as mentioned in the previous section, was restorative to the health of the ecosystem while also increasing market yields because of the symbiotic relationships between rearing plants and animals.

...Built into the emerging capitalist market economy was an inexorably accelerating force of expansion and accumulation...achieved...at the expense of the environment and the village community. The same expanding market force that began in the Netherlands and England in the sixteenth and seventeenth centuries with the application of organic fertilizers, agricultural improvement, and specialization for market profits, ultimately culminates in today’s agribusiness and the exportation of “green revolution” techniques to developing countries...Inorganic nitrate fertilizers and chemical pesticides, which leave long lasting soil depleting residues and have unanticipated side effects, the monoculture of high yield grains subject to large scale devastation by pests and disease, and the impetus to continually bring new

⁶² Ibid.

⁶³ Ibid.

“virgin” lands into cultivation for the market all disrupt established ecosystem balances. Secondly, the tendency toward growth, expansion, and accumulation inherent in capitalism results in the displacement of subsistence farmers from the land and disruption of traditional patterns of human land integration.⁶⁴

The scientific revolution in Europe entailed steps away from spiritual considerations of land management and was replaced with an emphasis on mechanization and industry. Machinery now dominated production. “The removal of animistic, organic assumptions about the cosmos constituted the death of nature—the most far reaching effects of the Scientific Revolution. Because nature was now viewed as a system of dead, inert particles moved by external, rather than inherent forces, the mechanical framework itself could legitimate the manipulation of nature”.⁶⁵ A decline in the belief of the intrinsic value of natural elements is soon replaced by the concept of nature through utility. Meaning, natural capital provided by ecosystem services such as farming are valuable for the commodities provided for humans, and not as means to their own ends. This sets the tone for long periods of ecological degradation. Ecological imperialism is a term coined by Alfred Crosby during the ecological expansion in Europe during the height of colonialism, beginning with Christopher Columbus. Ecological imperialism and early forms of industrial capitalism in Europe are vital to understanding the roots of industrial agriculture today.

Transition to Industrial Agriculture. To set the stage for the rise of industrial agriculture, one needs to understand the context allowing for the birth of the industrial agriculture movement. The period of 1860-1932 represents a rapidly changing landscape for American farmers. In 1861, the Homestead Act was put into place, which “granted 168 acres to farmers who would work the

⁶⁴ Carolyn Merchant, *Women, Ecology, and the Scientific Revolution* (San Francisco: Harper, 1983), 51-52.

⁶⁵ *Ibid*, 193.

land for five years. Under these grants, settlers flooded across the countryside to start farms”.⁶⁶ More opportunities for farmers during the period of expansion, especially after the period following the civil war when many ranch owners left for war leaving their ranches destroyed in their absence meant more opportunities for higher productivity. Soon after, in 1862 the U.S. Department of Agriculture (USDA) was established its first objectives being to “collect, arrange, and publish statistics, introduce new plants and animals, answer inquiries of farmers, test grains, fruits, plants, vegetables, and manures...”.⁶⁷ Soon after that farming became more efficient as techniques previously reliant on hand power moved to horsepower. Considered the “Golden Age of American Farming”, 1910-1914 set the standard as the most prosperous time for agriculture in the United States. World War I had a tremendous impact not only on the world, but of the national American landscape. “...Farmers experienced the unusual combination of high prices for their products as well as encouragement to expand their productive capacities. Fueled primarily by the growth of urban centers and the resultant demand for more food...there was a nearly insatiable appetite both in America and abroad for American farm products, particularly wheat and meat”.⁶⁸ Another contributing factor, “young men who might otherwise operate farms were fighting in the war, and the shortage of able-bodied men led equipment manufacturers to begin developing machinery for small farms”.⁶⁹ This period was a time concerned mainly with short term gains and was then hammered with long term losses as this system eventually failed. Upon entering the war in 1917, “prices for crops and land rose sharply. Land prices rose 60

⁶⁶ Dana L. Hoag, *Agricultural Crisis in America: A Reference Handbook* (Santa Barbara, CA: ABC-CLIO, 2000), 74.

⁶⁷ *Ibid*, 75.

⁶⁸ Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2010), 18.

⁶⁹ *Ibid*, 18.

percent between 1916 and 1920”.⁷⁰ However, this was quickly in decline as the postwar period saw a drastic drop in prices. “In 1920, corn prices fell from \$1.61 per bushel to just \$0.49 per bushel from May to December. The price fell to \$0.31 per bushel in 1921”.⁷¹ Adding further issues was the 1929 U.S. Stock market crash. Leading into a period of high business and government organization from 1933-1950. From 1933 to 1935 dust storms ravaged the great plains and destroyed not only acres and acres of property but lives. Known as the dust bowl, this era generated public support for soil conservation. The New Deal saw effects in farm life and increased government involvement in agriculture such as “soil conservation and grazing controls, programs to stimulate agricultural sales, and the first and most comprehensive commodity price and income support program”.⁷² An important precedent was set in 1942 when large commercial feedlots for beef were popularized. “Most beef we consume today is finished in large feedlots where cattle are fed concentrated diets, usually corn. Today more than three-fourths of these animals are processed by just four packing companies”.⁷³

In attempting to make farms “modern,” the framework of factories was applied in order to mass produce food, and then regurgitated on to farms across the nation, in order to improve efficiency. Technological advances from 1950-1980 saw productivity increasing “almost 2 percent every year”.⁷⁴ While there was an increase in productivity due to the technological boom, there was also a plethora of justice issues surrounding American farms. This period is known as the Green Revolution. Rachel Carson’s landmark book, *Silent Spring*, was released in 1962. Her book argues that “dichlorobiphenyl trichloroethane (DDT) was bad for the

⁷⁰ Dana L. Hoag, *Agricultural Crisis in America: A Reference Handbook* (Santa Barbara: ABC-CLIO, 1999), 77.

⁷¹ *Ibid.*

⁷² *Ibid.*, 78.

⁷³ *Ibid.*, 79.

⁷⁴ *Ibid.*, 80.

environment and therefore for society”.⁷⁵ This sparked outrage and helped foster the environmental movements, especially in agriculture. In 1964, “The Food Stamp Act ... formed the basis for food stamps, which gave poor people the means to buy agricultural commodities. Currently, this program spends nearly half of the total USDA budget”.⁷⁶ More legislature was passed in 1965 in the form of the Food and Agricultural Act. This was passed so “farmers were paid to not produce involuntary acreage-control programs”.⁷⁷ This period of time saw the interrelationships of farmers, the U.S. government, and advocacy groups and the establishment of several environmental agencies such as the Environmental Protection Agency (EPA) in 1970. In the 1980s, megafarms took hold of the American agricultural landscapes. “Concentrated animal feeding hog farms became one of the most controversial issues... farms can get so big that they generate more waste than many small cities”.⁷⁸

Where are we today? Although the current state of American industrial agriculture is not perfect, certain movements have taken off in recent years. This hopefully will allow more room for sustainability and spirituality in the future of agriculture. There is a growing emphasis and value placed on small scale sustainable agriculture, rather than the behemoth industries of the past. Granted these values come from a place of privilege, there are efforts being made to make fresh, sustainably made produce accessible across the board. Vertical farming in urban areas is one of these options. “These farms would raise food without soil in specially constructed buildings. When farms are successfully moved to cities, we can convert significant amounts of farmland back into whatever ecosystem was there originally, simply by leaving it alone”.⁷⁹ Farming

⁷⁵ Ibid, 81.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ Ibid, 83.

⁷⁹ Dickson Despommier, *The Vertical Farm: Feeding the World in the 21st Century* (New York: Picador, 2011), 3.

indoors is not a new concept, but vertical farms – in which our food would be continuously grown inside of tall buildings within the built environment, certainly is. Rapidly changing landscapes will cause humans to search for other ways to grow food. By using methods such as NFTs and other techniques, vertical farming enhances the ability for humans to grow their own food in a very unique way. Certain advantages offered by vertical farming include “year round crop production, no weather related crop failures, no agricultural runoff, allowance for ecosystem restoration, no use of pesticides, herbicides, or fertilizers, use of 70-95 percent less water, greatly reduced food miles, more control of food safety and security, new employment opportunities, purification of grey water to drinking water, and animal feed from postharvest plant material”.⁸⁰ Hydroponics and aeroponics are common systems in which vertical farming exists. Hydroponics “is a system where plants are grown in nutrient water that has been enriched with minerals and is used to optimize yields and quality of produce, especially for the indoor space”.⁸¹ Vertical farming would allow for the immense amount of land reserved for farmland across the nation to return back to its natural state. There are vertical farms sprouting up all over the nation. Certain examples in New York City are Square Roots Urban Growers, Bowery Farming, and Farm.One. Vertical farms in urban areas have the potential to be feeding large populations of people without the sprawling rural landscape once required.

Chapter 3. *Contemporary Religious Perspectives on Agriculture and Land Stewardship*

Farming has always been spiritual. Agriculture itself, and other forms of land tending have always been spiritual practices. It is without question that American farming is in crisis. Rising costs of labor and farmland itself, environmental degradation, and subsidization have all made importing food from other countries where it is cheaper to farm a more viable option. With the

⁸⁰ Ibid, 145-146.

⁸¹ Ibid, 108.

advent of specialized, standardized, and centralized control of agriculture in the name of efficiency and greater profits, we have sacrificed plants, animals, and people to perform like machines. This is a fundamental disrespect to the sanctity of life itself, and a result of the dehumanizing and desacralizing of the American food system and its farmers. Soil, seeds, sunlight, and water provide us with the basic biological functions our body needs to survive. Agriculture provides food, and food provides life. If life is sacred, then by extension, food and farming are sacred too. Since industrialization, farming has been taken out of its original purpose and transformed into a mechanical, lifeless process. Farms are essentially factories, and the supermarkets we go to every day are all part of the mass production of food. As discussed in the previous chapter, religion and agriculture have been closely related since the roots of agriculture in the Neolithic revolution. Gods of fertility, as well as certain aspects of the concept of sacred in the form of water, soil, life cycles, have all bore spiritual weight. This chapter will begin by discussing the roots of religion and agriculture generally before moving on to Pope Francis encyclical and then moving on to indigenous American religions and then discussing and parsing out some of the more religious or spiritual aspects of farming that have spiritual value such as I mentioned before like water, soil, seeds, life cycles and finally ending on food and community with an emphasis on procuring and appreciating food, and the practices of feasting and community.

Agriculture and Spirituality. Agriculture is a practice in which the intrinsic value of life is meant to be revered in gratitude for the sacred sustenance provided by the food produced. “The crisis in America agriculture has several root causes, but none is more fundamental or more important than is the dehumanizing and desacralizing of the American food and farming systems. As we have specialized, standardized, and centralized control of agriculture to make it

more efficient, we have forced living systems including plants, animals, and people to behave as lifeless machines".⁸² As discussed in the previous chapter, the advent of capitalism and its emphasis on efficiency, expansion, and profits stripped the sacred away from farming. The mechanization of agricultural processes, first through animal labor and most recently with massive and demanding machinery and chemical fertilizers has removed the soul of agriculture. The rise of the scientific revolution in Europe and ecological imperialism in the colonial period paved the way for the emphasis on economics, technology, and human dominion that allow for agriculture to dominate the American landscape today. Technology and the free market became sacred and replaced previous notions of land stewardship as spiritual. Farming is spiritual as a direct form of land stewardship. There are, in some cultures, entire gods dedicated to the seriousness of grains, especially corn.

Our entire food production and consumption process has become mechanized, toxified, and perhaps most significantly, desacralized. Indigenous peoples have always understood the sacred act of growing food and sharing a meal. In the rituals of the world's religions, sharing a meal is a recurrent theme. In Christianity, the Communion celebration is a core ritual—but how sacred is the body of Christ when the bread is grown without the loving care of the farmer?⁸³

⁸² John Ikerd, *Reclaiming the Spiritual Roots of Farming* (Durham, NH: Soul of Agriculture, 2001).

⁸³ Richards, Theodore, "The Farming Revolution and the New Spirituality", *The Wayfarer*, September 21, 2016, <https://thewayfarer.homeboundpublications.com/the-farming-revolution-and-the-new-spirituality-by-theodore-richards/>

Farming sets the tone for numerous early civilizations, and life is inconceivable without the commodities provided by farming. However, certain aspects of the sacred are completely missing in forms of agriculture today.

Unsettling of America. Wendell Berry is an extremely prominent environmental author, activist, and farmer himself. Industrialism, Berry claims, separates people from places, products, and their histories. “To the extent that we participate in the industrial economy, we do not know the histories of our families or of our habitats or of our meals”.⁸⁴ This is evident in industrial agriculture’s displacement of the original American farm communities. “Seventy years ago there were nearly 7 million American farmers. Today, after the onslaught of industrial agriculture, there are only about 2 million, even though the US population has doubled. Between 1987 and 1992, America lost an average of 32,500 farms per year, about 80 percent of which were family run”.⁸⁵ The destruction and severance of ties between people and the planet is both a result of and a necessary factor in the success of the industrial economy. The legacy of industrialism, especially industrial agriculture is also seen in the spiritual crisis related to colonialism in the Anthropocene. “What settler colonialism, and its extensions into contemporary petrocapiatalism, does is a severing of relations. It is a severing of relations between humans and the soil, between plants and animals, between minerals and our bones. This is the logic of the Anthropocene”.⁸⁶ The destruction of the American agricultural landscape is largely due to the rise of industrial systems that depend on blind consumer participation. This, however, wasn’t always the case.

⁸⁴ Wendell Berry, “The Whole Horse: The Preservation of the Agrarian Mind” *The Fatal Harvest Reader*, (Sausalito, CA: Foundation for Deep Ecology, 2002), 39.

⁸⁵ *Ibid*, 17.

⁸⁶ Heather Davis and Zoe Todd, “On the Importance of a Date, or Decolonizing the Anthropocene.” (ACME: An International Journal for Critical Geographies, vol. 16, no. 4) June 2016, 770.

This modern mind sees only half of the horse – that half which may become a dynamo, or an automobile, or any other horse powered machine. If this mind had much respect for the full-dimensioned, grass eating horse, it would never have invented the engine which represents only half of him. The religious mind, on the other hand, has this respect; it wants the whole horse, and it will be satisfied with nothing less.⁸⁷

Wendell Berry sees the current crisis of agriculture as having roots in a spiritual disconnect from the land. A proponent of the sacred in land management, Berry asserts that energy is an issue of religion. Quoting William Blake, “energy is Eternal Delight”.⁸⁸ Religion is what “binds us back to the source of life”⁸⁹ What is more of a source of life than the sustenance provided by tending the land (agriculture)? Energy, like religion, is paradoxical, for “[humans] cannot have it except by losing it; [humans] cannot use it except by destroying it”.⁹⁰ Energy can be destroyed when it is wasted, and its sacred life forces are represented in its sustainable cyclical behavior. The natural cycles of birth, growth, maturity, death, and decay are all forms of energy represented on the wheel of life. These cycles are all represented in agriculture in seed planting, tending, harvesting, and composting. Berry urges an environmental philosophy that moves beyond looking at systems of agriculture as economic, but rather instead, as systems representing the sacred life.

Earth as Holy. Cycles of life and death in food production may represent sacred aspects of land stewardship, but it is also paramount to recognize the religious importance of the earth itself. At the point of creation in the Hebrew Scripture, God creates heaven and earth. Earth is

⁸⁷ Wendell Berry, “The Whole Horse: The Preservation of the Agrarian Mind” *The Fatal Harvest Reader*, (Sausalito, CA: Foundation for Deep Ecology, 2002), 39.

⁸⁸ Wendell Berry, *The Unsettling of America*, (Berkeley, CA: Counterpoint Press: 1977), 85.

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

made in the hands of God before man. "...The formation of the created earth lies above and before man, and therefore it is not man's but God's. Man finds himself upon it, with many other creatures, all parts in some system which, since it is beyond man and superior to him, is divine".⁹¹ This statement is reflective of a worldview in which represents the intrinsic divinity of earth. If God created the heavens and earth, then humans are placed here as stewards of this sacred entity. "The sacredness to us of the earth is intrinsic and inherent. It lies in our necessary relationship and in the duty imposed upon us to have dominion, and to exercise ourselves even against our own interests. We may not waste that which is not ours".⁹² The obligations of humans on earth are to maintain the dignity of the planet. In regard to the sanctity of food production, Bailey asserts, "If the earth is holy, then the things that grow out of the earth are also holy. They do not belong to man to do with them as he will. Dominion does not carry personal ownership".⁹³ As discussed in an early section an ongoing theme of the demise of ethics in agriculture is the rise of industrial systems. These industrial systems are what remove humans from the landscape that has sustained them since the first agricultural revolution. Plenty of religious environmental thinkers believe that no human can own a piece of the earth, for the land belongs to god. Humans are here to steward the land, and it is the forgotten spiritual relationships that have brought on the immense agricultural crises.

Laudato Si. One of the most iconic documents on climate change is Pope Francis' encyclical *Laudato Si*. *Laudato si* is the second encyclical to come from Pope Francis. Dated May 24, 2015 the document has the subtitle "On Common for our Common Home". Few documents in the Catholic church have as much authority as an encyclical published by the pope. This document is

⁹¹ Liberty Hyde Bailey, *The Holy Earth* (Berkeley, CA: Counterpoint, 2015), 5.

⁹² *Ibid*, 12.

⁹³ *Ibid*, 13.

unprecedented in Pope Francis criticism of consumerism and the neglect of our duties as earth stewards. Although Pope Francis claims that this document wasn't meant to have long reaching environmental consequences, this statement sets the standard on the catholic standpoint on certain environmental issues. In the encyclical, Pope Francis states:

There are certain environmental issues where it is not easy to achieve a broad consensus. Here I would state once more that the Church does not presume to settle scientific questions or to replace politics. But I am concerned to encourage an honest and open debate so that particular interests or ideologies will not prejudice the common good.⁹⁴

This is a fascinating statement on climate change and the role of the Catholic church. The document certainly is hopeful in tone and claims that concern for the environment is anything but optional and should become a vital issue the church stands for in social justice. Pope Francis describes a certain throw away culture where he discusses most of the paper we produce is thrown away and not recycled. It is hard for us to accept that the way natural ecosystems work is exemplary: plants synthesize nutrients which feed herbivores; these, in turn, become food for carnivores, which produce significant quantities of organic waste which give rise to new generations of plants. But our industrial system, at the end of its cycle of production and consumption, has not developed the capacity to absorb and reuse waste and by-products. We have not yet managed to adopt a circular model of production capable of preserving resources for present and future generations, while limiting as much as possible the use of non-renewable resources, moderating their consumption, maximizing their efficient use, reusing and recycling them. A serious consideration of this issue would be one way of counteracting the throwaway culture which affects the entire planet, but it must be said that only limited progress has been

⁹⁴ (LS § 188).

made in this regard.⁹⁵ Part of this stems from the pope's belief that humans no longer see God as Creator, and therefore believe that human dominion over nature is more powerful than God. Instead of viewing humanity as having dominion over the earth, Francis urges that we must see that everything is interconnected, and all of creation is a kind of universal family. Nature cannot be seen as something apart from humanity, or merely the place where we live. Though Pope Francis never mentions agriculture by name, much of his claims in the encyclical can and should be applied to different forms of land stewardship.

Pope Francis calls for a global consensus that would lead “to planning a sustainable and diversified agriculture, developing renewable and less polluting forms of energy, encouraging a more efficient use of energy, promoting a better management of marine and forest resources, and ensuring universal access to drinking water”.⁹⁶ Pope Francis addresses the entire planet in his encyclical, and he reminds us that we are of the earth itself. ““we ourselves are dust of the earth” (Gen 2:7); our very bodies are made up of her elements, we breathe her air and we receive life and refreshment from her waters. We are part of nature, included in it and thus in constant interaction with it”.⁹⁷ In this sense, humans must at the very least take on the role as stewards in order to nourish and sustain a land that also nourishes and sustains us. Earth stewardship is a common tenant of catholic environmentalism because it was God who asks for the earth to be tilled and kept.

Biblical tradition in the eyes of Pope Francis says that “human life is grounded in three fundamental and closely intertwined relationships: with God, with our neighbor and with the

⁹⁵ (LS § 22).

⁹⁶ (LS §164).

⁹⁷ Cardinal Peter Turkson, “Laudato Si and Agriculture” *Catholic Rural Life*, September 18, 2015, <https://catholicrurallife.org/laudato-si-and-agriculture-a-prince-of-the-church-explains-the-connection/>

earth itself”.⁹⁸ The health of one of these relationships is dependent on the health of the other two, it is part of Pope Francis’ concept of integral ecology. These relationships depend on acting in the common good in serving the universal dignity of all species on earth. In this case, upholding human dignity comes from providing food security. By extension, this can apply to the dignified treatment of the plants and animals humans will consume. Pope Francis writes:

The ecological crisis] has led to a constant schizophrenia, wherein a technocracy which sees no intrinsic value in lesser [nonhuman] beings coexists with the other extreme, which sees no special value in human beings. ... A misguided anthropocentrism need not necessarily yield to “biocentrism” ... Nor must the critique of a misguided anthropocentrism underestimate the importance of interpersonal relations.⁹⁹

Pope Francis offers a moral and religious framework for agriculture in his encyclical. There is a prevailing notion that farmers are doing God’s work through tilling and keeping of the earth, and encourages sustainable agriculture when he calls for an emphasis on “more diversified and innovative forms of production which impact less on the environment” such as small-scale production¹⁰⁰:

For example, there is a great variety of small-scale food production systems which feed the greater part of the world’s peoples, using a modest amount of land and producing less waste, be it in small agricultural parcels, in orchards and gardens, hunting and wild harvesting or local fishing. Economies of scale, especially in the agricultural sector, end up forcing smallholders to sell their land or to abandon their traditional crops”.¹⁰¹

⁹⁸ (LS §66).

⁹⁹ (LS §118).

¹⁰⁰ (LS §191).

¹⁰¹ (LS §129).

Pope Francis is a religious and moral leader at the forefront of recognizing issues in industrial agriculture and promoting more sustainable, spiritual considerations of our common home.

Traditions in Hopi Agriculture. In a different context than Abrahamic faiths, agriculture is still a highly spiritual act. Hopi techniques of “dry farming” (relying only on precipitation in the arid climate) have sustained the tribe for almost a thousand years. Part of the Hopi creation myth is that Masaw, Earth Guardian, “gave the people a planting stick, a bag of seeds, and a gourd of water. He handed them a small ear of blue corn and told them, ‘Here is my life and my spirit. This is what I have to give you’”.¹⁰² Thus began a millennium long tradition of self-sustenance based on corn. Corn is so much more than something that sustains life, although of course, that in and of itself is sacred.

For the people of the mesas corn is sustenance, ceremonial object, prayer offering, symbol and sentient being unto itself. Corn is the Mother in the truest sense – the people take in the corn and the corn becomes their flesh, as mother’s milk becomes the flesh of the child. Corn is also regarded as the child, as when the wife of a farmer tends to the seeds and newly received harvest, blessing and ritually washing the corn, talking and singing to the seeds and ears. The connection between the people and the corn is pervasive and deeply sacred. In a remarkable symbiosis between the physical and the spiritual, the Hopi people sustain the corn and the corn sustains Hopi culture.¹⁰³

The relationship the Hopi have with the land is profound. Methods of farming in the desert have allowed for life to thrive in an otherwise extremely unforgiving environment. Relying primarily

¹⁰² Dennis Wall, and Virgil Masayesva, “People of the Corn: Teachings in Hopi Traditional Agriculture, Spirituality, and Sustainability”, *American Indian Quarterly*. Summer 2004. Vol 28, no 3&4, 435.

¹⁰³ *Ibid*, 436-437.

on the little precipitation that occurs in the arid climate of northern Arizona, many different varieties of corn are grown. Although simple yet advanced methods and techniques are involved in the production of corn, prayer is equally important. Ceremonies and rituals “entreat the spirits of the earth, the sky, the mountains, and the clouds to bring the rain, to tame the wind, to provide a bounty in the fields year after year. This all embracing focus on sacred ceremony is a powerful cultural binder, guiding the people in common purpose as it sustains a rich cultural tapestry of spirituality, work, and tradition”.¹⁰⁴ The Hopi are successful in recognizing the sacredness of the earth and what careful management and care may provide its stewards with.

Chapter 4. Agricultural Ethics

Leopold on Agriculture. Aldo Leopold famously said, “We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect”.¹⁰⁵ Aldo Leopold (1887-1948) was an American author, philosopher, scientist, ecologist, forester, conservationist, and environmentalist. An extremely prominent environmental philosopher, Aldo Leopold pioneered the land ethic in his book, *A Sand County Almanac*. Aldo Leopold has left behind a great legacy as an environmental figure since his passing, and his simple yet poignant view on land ethics can be summarized as “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”.¹⁰⁶

Aldo Leopold’s Land Ethic is one of the best known environmental ethical theories, and his philosophy sought to develop a theory pertaining to our duty and obligations to nature. As a

¹⁰⁴ Ibid, 441.

¹⁰⁵ Aldo Leopold, *A Sand County Almanac, and Sketches Here and There* (New York: Oxford University Press, 1949), viii.

¹⁰⁶ Ibid, 262.

famous conservationist, Leopold stressed “wise use” and limiting consumption to a rate slower than the replacement rate making the consumption of resources more sustainable and renewable. Conservation ideologies focus on the needs and interests of the people, while also repairing damage from unsustainable practices from before. The Land Ethic is about removing humans from the top of the hierarchy of nature, in favor of genuine respect and intrinsic love of nature. “Civilization has so cluttered this elemental man-earth relationship with gadgets and middlemen that awareness of it is growing dim. We fancy that industry supports us, forgetting what supports industry”.¹⁰⁷ Leopold’s critique of mechanization has only become timelier since his death, as the rise of industrial frameworks has even further removed humans from the chains of production while also situating them at the center of ecological communities.

The Land Ethic theorizes the moral responsibility of humans to the natural world, and rejects an anthropocentric worldview, in favor of preserving healthy and sustaining ecosystems. The Land Ethic is a rationale for conservation and balances human interests and the health of the environment. Leopold, however, questions whether or not this is possible given certain Western understandings of humans’ role in the natural hierarchy. This is in part due to unconscious religious framing. He writes, “conservation is getting nowhere because it is incompatible with our Abrahamic concept of land”.¹⁰⁸ Although God created heaven and earth, the role of humans in natural systems is up to interpretation. The large consensus, however, in Abrahamic traditions is that humans are stewards of the natural world. Meaning, human conceptions of nature place themselves as having dominion over the natural world, which is incompatible with the way Leopold sees as vital to moving forward in resource conservation:

¹⁰⁷ Ibid, vi.

¹⁰⁸ Ibid, viii.

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts... The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land... In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.¹⁰⁹

Considering how much the American farm landscape has changed since Leopold's death in 1948, the Land Ethic should evolve with and guide current and future land developments. Most of the farms that Leopold was discussing when critiquing the abuse of land in the 1930s were owned by smaller family farmers, and he reasoned that "there can be no solution until conservation practices are habitual on private farms".¹¹⁰ Less than a hundred years ago, most farmland was dominated by owner operators that had a pivotal role in maintaining the health of the local land systems, namely because this was the basis of their livelihood and passing down the farm to future generations depended on sustaining a healthy soil for years to come. Leopold appealed to landowners' individual morals when he put forth his land ethic, but the landscape of American farmland has changed drastically:

Some 400 million acres (nearly half of US farmland) are predicted to change hands in the next 20 years. In the process, traditional family farms are being gradually purchased by a new class of non-farming owners who no longer live and work on the land and have little personal connection to it; many may never even set foot on their land. More than ever, the new owners—often large corporations, LLCs and investment companies—really do regard

¹⁰⁹ Ibid, 204.

¹¹⁰ Curt Meine and Richard Knight, *The Essential Aldo Leopold*, (Madison, WI: University of Wisconsin Press, 1999), 163.

farmland as a commodity. Land management decisions are left to hired farm managers who rent the land to tenant farmers who do the actual work.

Today, 39 % of American farmland is rented and worked by tenant farmers, and non-farming landlords own 80 percent of all rented farmland. Although they have access to sophisticated management tools that help increase yields and conserve soil and water, absentee owners, hired managers and renters are less easily influenced by a land ethic than owner-operators with more personal investment in the land's health.¹¹¹

The implications of a large-scale land ethic are extremely important in discussing environmental ethics.

Callicott's Ecocentric Land Ethic Approach

J. Baird Callicott is an American philosopher and specializes in environmental philosophy and ethics. J. Baird Callicott is based at the University of North Texas and is also associated with the University of Wisconsin-Stevens Point, Yale University, the University of California, Santa Barbara, the University of Hawai'i and the University of Florida. Callicott is a major proponent of the Land Ethic as put forth by Aldo Leopold in his seminal piece, *A Sand County Almanac*. In fact, one of Callicott's most prominent works is entitled *In Defense of the Land Ethic*. A quote from Callicott's personal environmental philosophy work is, "I set out, as a philosopher, to work as a peer to the moral philosophers of the past, to create something new under the philosophical sun – under the gaze of Apollo, as it were – 'a new, an environmental ethic'".¹¹² J. Baird Callicott used Aldo Leopold's principles as a guiding principle for his

¹¹¹ Stanley Temple, "An Ethical Predicament on Farmland", *Sustainability*, <https://blogs.thomsonreuters.com/sustainability/2015/10/21/executive-perspective-an-ethical-predicament-on-americas-farmland/>

¹¹² J. Baird Callicott, "Animal Liberation: A Triangle Affair", *Environmental Ethics* 2 (4):311-338, 1980.

environmental philosophy. A guiding quote from Aldo Leopold, “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”.¹¹³ Baird Callicott makes it clear that he agrees with Leopold in that “traditional western systems of ethics have not accorded moral standings to nonhuman beings”.¹¹⁴ Callicott agrees with some part of Leopold’s land ethic, although he does not agree to the entire extent of Leopold’s animal liberation. Although reforming animal experimentation, farming, and hunting/fishing is something that should happen, Callicott is suspicious of extremely liberal animal liberalization. Callicott writes, “there is something jarring about such a graduated progression in the exfoliation of a more inclusive environmental ethic, something that seems absurd. A more or less reasonable case might be made for rights for some animals, but when we come to plants, soils, and waters, the frontier between plausibility and absurdity appears to have been crossed”.¹¹⁵ I disagree with Callicott’s critique that the liberation of the natural world is ridiculous. Humans have degraded the natural world for centuries, with no regard for the consequences. Who is to say that plants, soils, rivers, oceans, do not have the right to live their best lives?

Eating Morally. What does it mean to eat morally? For the sake of this paper, let’s assume that ethical consumption under this system of capitalism is possible. It would be foolish to not include a discussion of what it means to eat in a moral context. As discussed earlier, a large part of the American food market is centered around food production, specifically manufacturing a need for certain diet trends and instilling anxieties about American bodies. Instead of loosely researched information on the ideal diet that is conveniently always changing, a higher priority

¹¹³ Aldo Leopold, *A Sand County Almanac, and Sketches Here and There* (New York: Oxford University Press, 1949), 126.

¹¹⁴ Callicott, 324.

¹¹⁵ *Ibid.*

should be the deeper issues of food production, transportation, and consumption. Previously the systems of food production allowed for the systems to be more localized, but with rising standards and increasing yields of production; food production is global. Tastes are changing, however, and more people are concerned with the ethical implications of what they are eating.

Some questions to consider:

While we purchase, prepare, and eat food on a daily basis, our diets link us to large food and agricultural systems that raise many environmental, social, and ethical issues. Who raises, processes, and transports the food we eat, and are the producers and workers treated fairly? What about the billions of animals that are raised and slaughtered each year to provide the meat, eggs, and dairy products we consume? What are their lives like, and do they have their own interests that need to be considered? Or are they merely resources for human use like other natural resources such as timber or mining? What are the environmental impacts of industrial scale farms that rely on vast quantities of fossil fuel and chemical inputs to produce monocrop corn and soybeans as commodities for global trade and feed for animals? What are the effects on developing nations that shift their agriculture to raise crops and animals for export to the United States and other wealthy nations under the pressure of structural adjustment programs induced by the international Monetary Fund and free trade agreements promulgated by the World Trade Organization? Is it even moral to eat animals when there are other alternatives that can meet our dietary needs?¹¹⁶

Another issue is the inherent privilege in purchasing food that is labeled as “ethical”. These foods are priced at a premium, and many are unable to afford these goods. Most of the food

¹¹⁶ James Martin-Schramm, *Earth Ethics* (Maryknoll, NY: Orbis Books, 2015), 107.

available to purchase is extremely inexpensive compared to the cost of production because most of the cost is externalized and/or subsidized by the government. Americans, however:

on average spend about 10 percent of their disposable income on food, by far the smallest percentage of any nation, and about half of what we paid only fifty years ago. Yet this is made possible by paying only a fraction of the true costs that go into producing that food. These externalities and subsidies often take the form of environmental degradation...Industrial-scale agriculture degrades the environment through topsoil loss and groundwater contamination. Agricultural subsidies prop up farmers, and military expenditures provide access to foreign fossil fuels needed to keep modern agriculture functioning.¹¹⁷

Animal Rights and Factory Farming

The definition of speciesism is “prejudice or discrimination based on species; especially discrimination against animals, and the assumption of human superiority on which speciesism is based” (Merriam-Webster). Speciesism as the roots of animal abuse in major industries, especially the idea that animals are here to serve mankind. Food production is another form of hegemonic animal abuse. The meat that we eat from animals has been tortured and killed inhumanely. Before these animals were killed, they lived in conditions that no animal should live in. On the one hand, we have this idea in our head that the steak we ate for dinner last night, and the bacon we had this morning with breakfast came from a farm with rolling fields and the sunshine is out with a big red barn. We like to think that these animals once had a happy life, without wanting to change the lifestyles contingent on meat consumption. If people knew where their food was coming from, and how it was treated – they would be outraged. The immense

¹¹⁷ Ibid, 109.

amount of meat that floods US supermarkets is completely taken for granted. We do not see that this is an exploitation of the weak by the strong, because humans have the greater power in this situation and will decide when/where/how/why the animal will die. Humans view themselves as compared to “the other animals” regarding moral standing. All other beings such as (nonhuman animals) are only instruments to humans. This is contrasted with the view that all beings have moral standing. Whether or not you subscribe to the belief that all beings have moral standing depends on your environmental worldview. “Whether we have a presumptive duty to some entity depends on our settling the dispute over whether it has moral standing” or “however, even if we settle this dispute, there is still the issue of just what reasons would justify our thwarting the interests of a being with moral standing”.¹¹⁸ Animal liberationists focus on mostly sentient, non human beings.

Peter Singer’s Utilitarian Approach. Peter Singer is an Australian moral philosopher associated with Princeton University, University of Melbourne, and Monash University. Singer’s specialty is in applied ethics and is known for his secular, utilitarian viewpoints. His most famous book is his book promoting animal rights, *Animal Liberation*. *Animal Liberation*, from which I will speak about in the following paragraphs. *Animal Liberation* is a book that promotes vegetarianism within the realms of animal rights. Peter Singer writes about his view on animal rights in his piece on *Animal Liberation*. The premise of Peter Singer’s work is based upon the concept of speciesism. Speciesism is a concept based on the principles of prejudice. We are familiar with racism, sexism, and ableism. Speciesism takes those same concepts but is based upon the idea that humans exert an overwhelming amount of control over animals and use this to

¹¹⁸ Donald VanDeVeer and Christine Pierce, *The Environmental Ethics and Policy Book: Philosophy, Ecology, Economics* (Boston: Cengage Learning, 2002), 116.

our advantage to exploit and discriminate against animals. Peter Singer asks us to expand our moral horizons to account for animals as beings with moral value in themselves. “It is a demand that we cease to regard the exploitation of other species as natural and inevitable, and that, instead, we see it as a continuing moral outrage”.¹¹⁹ Although Singer notes that animals and humans may not have literal factual equality, they should have equality under moral consideration. Singer cites Jeremy Bentham as a pioneer in this theory. Bentham wrote, “the day may come when the rest of the animal creation may acquire those rights which never could have been [withheld] from them but by the hand of tyranny...It may one day come to be recognized that the number of the legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate”.¹²⁰ Singer agrees with this statement, further adding that if a being suffers, there is no moral justification for ignoring the suffering of such being, and further goes on to prove that animals feel pain and are not just machines. Singer attributes speciesism to Richard Ryder to “describe the belief that we are entitled to treat members of other species in a way in which it would be wrong to treat members of our species”.¹²¹ Animals are exploited in industries of pets, food, entertainment, clothing, and fishing. Each of these has a detrimental impact on the livelihood on the animals and is not morally justifiable.

Regan’s Kantian, Deontological Approach. Tom Regan is an American philosopher that specializes in animal rights theory. One of Tom Regan’s most famous works is a book called *The Case for Animal Rights*. Some of Regan’s most famous work comes from this book and requires us to extend our moral horizons to include animals as moral beings. Tom Regan is associated

¹¹⁹ Ibid, 135.

¹²⁰ Ibid, 136.

¹²¹ Ibid, 138.

with Thiel College, the University of Virginia, and North Carolina State University. Tom Regan begins his case for animal rights by describing the goals of the animal rights movement. These goals include, “the total abolition of the use of animals in science, the total dissolution of commercial animal agriculture, and the total elimination of commercial and sport hunting and trapping”.¹²² One of Regan’s most important points is that “the fundamental wrong is the system that allows us to view animals as our resources, here for us: to be eaten, or surgically manipulated, or put in our coarse hairs for sport or money. Once we accept this view of animals, as our resources, the rest is as predictable as it is regrettable. Why worry about their loneliness, their pain, their death? Since animals exist for us, here to benefit us in one way or another, what harms really doesn’t matter-or matters only if it starts to bother us, make feel a trifle uneasy when we eat our veal scampi”.¹²³ Tom Regan raises a lot of excellent yet provocative questions and ones that make us uncomfortable. We have an image or an idea in our heads that animals are our friends, or pets are part of our family, regardless most meat eaters like to think that the meat that they are eating came from an animal that lived a happy life on a farm with a big red barn and rolling pastures. These industries thrive on people and regulations turning a blind eye and allowing people to indulge in a lie that makes them feel better.

Chapter 5. *The Sustainable, Spiritual Land Ethic.*

It is becoming increasingly necessary for a framework applicable to recent advances in the technology of farming. This chapter will provide policy recommendations for the future of spiritual, sustainable, and ethical farming. “The ‘spiritual’ is simply a way of understanding our world that acknowledges the connection and relationship to the rest of the expanding

¹²² Ibid, 143.

¹²³ Ibid.

universe”.¹²⁴ Agriculture is in this way, certainly spiritual, as it connects humans to the earth and a higher creator. Sustainability as a concept is also spiritual because it reflects considerations of the future and requires that those that practice sustainability must pay very close attention to larger relationships in the farming system. In order to create a sustainable and spiritual system for agriculture, production techniques must reflect and be consistent with the earth’s natural systems. The forms of farming reliant and encouraging of maximum yields in monocropping will be eliminated or at least greatly reduced. When building farm communities, it is important to ask questions such as, “How do our farms affect the birds and bees and earthworms and air and water and soil micro-organisms? How do our production systems affect the cows and corn and native grasses on our farms?”.¹²⁵ More and more commonly are examples of farming systems based in synergistic biological relationships with plant and animal species and their abiotic components. Takao Furuno is a farmer in Japan producing duck meat, duck eggs, fish meat, fruit, and rice at high levels of productivity and efficiency, while also keeping in mind the interactions of the commodities he produces. Because of Takao Furuno’s holistic view of agricultural production, he has increased his rice yields “up to 50 percent” as compared to his “former high-input, industrial, mono-crop rice farm”.¹²⁶ Although increasing yields through productivity isn’t the end all be all for the sustainable, spiritual land ethic, it shows that “introducing multiple species into the same environment in ways that allow ‘all components to influence each other positively in a relationship of symbiotic production’”.¹²⁷ As mentioned in earlier sections, contemporary industrial systems depend on distancing and a stretching of relationships of people and

¹²⁴ Kirschenmann, Frederick, “Spirituality in Agriculture”, *Leopold Center for Sustainable Agriculture*, <https://www.leopold.iastate.edu/files/pubs-and-papers/2005-10-spirituality-agriculture.pdf>

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Ibid.

commodities. This form of agriculture is about replacing and even strengthening these symbiotic relationships that already exist in nature, and this allows these systems to become much efficient.

Aldo Leopold had a very specific conception of a land ethic, some of which is incompatible with cultural and technological advances in 2019. One of his most important points, however, is that “land is not merely soil...it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil”.¹²⁸ This quote perfectly encompasses the spiritual component to land ethics in agriculture. The components that make up agriculture: soil, water, sunlight, and the process of photosynthesis are all sacred in and of themselves. Together, they represent a sacred cycle of life, and are more than their individual significance of food production. Leopold writes, “It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value”.¹²⁹

Eating responsibly, morally, and spiritually is an indispensable component to the land ethic. Eating itself, like agriculture, is a spiritual act. “Eating, the intake and absorption of nutrients, is neither incidental nor instrumental but rather an integral part of life. “Why did God Create a world in which every living creature must eat?” Life as we know it depends on death, needs death, which means that death is not simply the cessation of life but its precondition”.¹³⁰ Part of consumption is death. Agriculture is a production of life through food, which is then eaten. “This reality is embedded as the heartbeat of creation, pumping life forward day after day, generation after generation, and while it includes some beings that simply take in the already

¹²⁸ Aldo Leopold, *A Sand County Almanac*, 216-218.

¹²⁹ *Ibid*, 223.

¹³⁰ Norman Wirzba, *Food and Faith: A Theology of Eating* (New York: Cambridge University Press, 2011), 1.

deceased – for instance, scavengers or plants – It also consists of creatures that kill, directly seizing the life of another, in order to be nourished”.¹³¹ There needs to be a reversion back to spiritual eating. Through food, we get a glimpse at “god’s goodness in activities: cultivating, preparing, sharing, and tasting food”.¹³²

The Qur’an and *hadith* depict Islamic care ethics toward animals: animals live in *ummah*, or communities of their own’ animals have languages of their own; kindness to animals results in God’s forgiveness; animal cruelty results in hellfire; slaughter must be according to specifications; and animals should live naturally and eat their naturally adapted food. In eco halal food movements, priorities for earth care combine with specific requirements for *halal* slaughter, which have traditionally been understood as more humane methods to reduce animal suffering.¹³³

Part of what this kind of moral eating requires is to eat together and go make a meal with people. This is largely missing from a society so entranced with efficiency. “When you eat together, and eat a meal you cooked yourselves, you are involved with the process in a different way. You shelled the peas, you peeled the potatoes, and you want everyone to enjoy every last bite...To paraphrase Wendell Berry, such meals honor the materials from which they are made;

¹³¹ Nelson Reveley, “Eating: Glimpsing God’s Infinite Goodness” *That All May Flourish: Comparative Religious Environmental Ethics* (New York: Oxford University Press, 2018), 50.

¹³² Sarah E. Robinson-Bertoni, “All God’s Creatures Are Communities Like You (Qur’an 6:38)”, *That All May Flourish* (New York: Oxford University Press, 2018), 92.

¹³³ *Ibid.*

they honor the art by which they are done; they honor the people who make them and those who share them”.¹³⁴

Although the bucolic image of the American farm often prevails, urban sprawl is a phenomenon occurring across the nation. Increasing urban space does not mean that forms of urban agriculture can't exist. “Many community gardens are critical sources of food for low income people. Community gardens are [also] a way for people to work together, socialize and talk with their neighbors. Users plan, construct, and maintain the space, thus building community relations at the same time they save money and lower the cost of living”.¹³⁵ It is true that urban agriculture and community gardens can greatly improve the quality of life in the city. “[Urban] farming can contribute to the rebirth of civil society and development of the community as neighbors cooperate in the establishment, management and supervision of community owned or accessible garden plots.¹³⁶ Vertical farms are an increasingly viable solution for the future of urban farming. Some of the advantages include:

year round crop production, no weather related crop failures, no agricultural runoff, allowance for ecosystem restoration, no use of pesticides, herbicides, or fertilizers, use of 70-95% less water, greatly reduced food miles, more control of food safety and security, new employment opportunities, purification of grey water to drinking water, animal feed from postharvest plant material”.¹³⁷

¹³⁴ Alice Waters, “The Ethics of Eating”, *Fatal Harvest Reader* (Sausalito, CA: Foundation for Deep Ecology, 2002), 284.

¹³⁵ Thomas A. Lyson, *Civic Agriculture: Reconnecting Farm, Food, and Community* (Lebanon, NH: University Press of New England, 2004), 95-96.

¹³⁶ Ibid.

¹³⁷ Dickson Despommier, *The Vertical Farm: Feeding the World in the 21st Century* (New York: Picador, 2010), 145-146.

As much as vertical farming has answers to some of the woes of large-scale industrial agriculture, such an ethic would be incomplete without the ethical and spiritual considerations discussed previously.

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