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Christian Ethics and Dietary Choices

Eating is one of the most foundational acts of human existence. The consumption of food sustains our bodies, often provides a context for deep interpersonal bonding, and constitutes perhaps humanity's most intimate form of relationship with the rest of creation. Despite the centrality of food in our lives, however, many of us give relatively little thought to the impacts of our dietary choices. While we may give some attention to the effects of our food choices on our own physical appearance or health, we often lack adequate awareness of the profound impacts that these choices also have on animals, food producers and processors, rural communities, the world's hungry, the environment, and even our own moral character. With regard to the environment, for example, a recent United Nations report revealed that the global livestock industry is responsible for more greenhouse gas emissions than all forms of transportation combined, an astounding and little known reality.[1] In this paper I plan to explore several aspects of our dietary choices, with particular attention to the effects of modern forms of meat production on animals, ecology, and world hunger. The topics of organic agriculture, fair trade, genetic engineering, and the local food movement will also be briefly touched upon. The principles of Catholic Social Teaching will provide a moral framework for the analysis in this paper.

[1] See U.N. Food and Agriculture Organization *Livestock's Long Shadow: Environmental Issues and Options* (Rome: FAO, 2006), www.fao.org/docrep/010/a0701e/a0701e00.htm.

"Factory Farm" Meat Production

When considering dietary choices, one important question is whether or not to eat meat and, if so, how much, what type, and produced under what conditions. In the United States, the rising number of vegetarians/vegans has made meat-eating an increasingly common topic of discussion and debate. The moral issues involved in decisions concerning meat-eating are many. Perhaps most prominent is the question of the moral status of animals. Does the suffering of animals matter? Should methods of livestock raising that entail extensive suffering for animals be viewed as morally unacceptable? And what about so-called "humane" methods of animal raising? Even if animals were to be relatively well-treated prior to being slaughtered, do they have a "right to life" (or a similar moral claim expressed in non-rights language) that is violated by killing them, typically at a very young age, when viable alternatives for adequate human nutrition exist?

In reflecting upon these issues, it is crucial to be aware of the realities of modern meat production. While many of us have mental images of animals being raised in barnyards (images obtained primarily from children's storybooks and petting zoos), the dominant forms of livestock raising today are radically different. The vast majority of meat currently sold in the United States and other wealthy countries, and increasingly even in poorer countries, is produced in "factory farms," facilities which are more formally known as "Confined Animal Feeding Operations" (CAFOs). Some details of these factory farm operations, while likely difficult to read (in fact *hopefully* difficult to read), are essential background for our moral deliberation.

Chickens - The animal raised in the largest numbers for human consumption is the chicken. An estimated 43 billion "broiler" chickens (a term used to refer to chickens that are raised exclusively for their meat, as opposed to egg-laying chickens) are killed and eaten each year,

about 9 billion of them in the United States.[2] Nearly all broiler chickens in the United States (over 99%) are raised in factory farm conditions.[3] Tens of thousands of birds (up to 100,000 or more) are typically crammed together in one large building, with no access to the outdoors. According to industry guidelines, each bird is to be provided with approximately 96 square inches of space, about the size of a standard 8 1/2 x 11 inch sheet of paper.[4] In these crowded indoor conditions the birds are unable to establish normal patterns of social interaction or to engage in typical activities of chickens such as taking dust baths or scratching around in the dirt or grass. The chickens are also subject to many health hazards. Ammonia from the birds' wastes, for example, builds up rapidly in the air and in the litter, which covers the entire floor of the factory farm building. Exposure to ammonia commonly causes chronic respiratory problems and foot and breast blisters for the birds and in extreme cases can cause blindness. Other negative health impacts arise from the fact that modern broiler chickens have been selectively bred to put on the most weight in the least time possible, growing approximately three times as fast as the typical chicken of the 1950s. This rapid weight growth causes an array of serious problems, most notably leg injuries. According to Professor John Webster of the University of Bristol School of Veterinary Science, the vast majority of factory-farm broiler chickens suffer severe chronic leg pain for at least the last fifth of their lives.[5] The birds are in fact so overweight and unhealthy that

[2] Compassion in World Farming Trust, "Industrial Animal Agriculture," 2. Available at http://www.ciwf.org.uk/includes/documents/cm_docs/2008/i/industrial_animal_farming_booklet.pdf; Also see "The Chicken Flesh Industry," http://www.goveg.com/factoryFarming_chickens_flesh.asp.

[3] Peter Singer and Jim Mason, *The Ethics of What We Eat: Why Our Food Choices Matter* (Emmaus, PA: Rodale, 2006), 23. For detailed descriptions of the factory farming of chickens, see pp. 21-36. Also see Sally Kneidel and Sara Kate Kneidel, *Veggie Revolution: Smart Choices for a Healthy Body and a Healthy Planet* (Golden, CO: Fulcrum, 2005), 65-86.

[4] Singer and Mason, *Ethics*, 23.

[5] Ibid., 24.

they would normally die before they are sexually mature. Therefore, those birds that are to be used for breeding have to be placed on a diet containing approximately 60-80% less food than they would otherwise eat. This results in these birds experiencing the constant sensation of hunger throughout the remainder of their lives.[6]

Broiler chickens (except those used for breeding) are typically killed around the age of 6 weeks. In the slaughtering process the birds are grabbed and hung upside-down on a "killing line" while still fully conscious. Their heads are then dipped in electrified water, which paralyzes them but usually does not render them unconscious. The birds then have their throats slit and are dumped into a tank of scalding water. Due to the very high speeds of the typical killing line (often 90-120 birds/minute), some birds are missed in the throat-cutting process and enter the boiling water while still fully conscious.[7] It is important to stress the these living conditions and conditions of slaughter described here are not aberrations or worst-case examples. They are, rather, the standard, accepted practices of the factory-farm chicken industry.[8]

Laying Hens - Chickens raised for laying eggs experience conditions possibly even worse than those of the broiler chickens.[9] Laying hens are generally caged, often 7-8 birds to a cage that measures about 18 inches x 20 inches, smaller than an opened sheet of newspaper. The birds are so crowded together that they are unable to even open their wings. Their feathers often are

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[6] Ibid., 25.

[7] Ibid., 25-26.

[8] The classic text on factory farm animal production is Jim Mason and Peter Singer, *Animal Factories: What Agribusiness is Doing to the Family Farm, the Environment, and Your Health*, rev. ed. (New York: Harmony Books, 1990). For discussion of slaughterhouse conditions, see Gail Eisnitz, *Slaughterhouse: The Shocking Story of Greed, Neglect, and Inhumane Treatment Inside the U.S. Meat Industry* (Amherst, NY: Prometheus, 2007).

[9] Detailed description of the living conditions of hens on factory farms can be found in Singer and Mason, *Ethics*, 37-41; Kneidel and Kneidel, *Veggie Revolution*, 79-86.

rubbed away on the sides of the cage. To keep the animals from killing each other in the stress of such intense confinement (chickens have natural inclinations to establish a "pecking order"), the tips of their beaks are routinely chopped off, without anesthesia. As the beaks contain sensitive nerves, this is a highly painful procedure for the birds. Due to lack of mobility the hens' toes often grow around the wire in the bottom of the cages, and they have to be ripped out when taken for slaughter. There may be 100,000 or more hens in one facility, with the birds often stacked in cages three or four tiers high, the droppings of the animals from the higher cages falling on those below. The hens never go outdoors (or even out of their cage) and generally never experience natural light. While a laying hen could normally live up to 10 years or more, factory-farmed hens are generally slaughtered between the age of 1½ and 3 years when their peak productivity declines, though many die even earlier from injuries or disease.

Because the chickens used for laying eggs are a different breed than the broiler chickens and do not gain weight as "efficiently," the male chicks of egg-laying hens are considered to be without value and are typically killed at birth, either being thrown (fully conscious) into a high-speed grinder or simply thrown into garbage bags and allowed to die of suffocation or starvation. This gruesome reality is the fate of many millions of male chicks each year. Even most organic, free-range egg producers either kill male chicks at birth or, more commonly, buy their chicks from businesses that kill the males at birth, one of the reasons that many would argue that commercial egg production can never truly be humane. Speaking of the overall treatment of factory-farmed chickens, veterinary professor John Webster suggests that it represents "in both magnitude and severity, the single most severe systematic example of man's inhumanity to another sentient animal."[10]

[10] Cited in Singer and Mason, *Ethics*, 24.

Pigs – More than 90% of pigs in the U.S. are now raised in factory farm conditions, a percentage that has escalated dramatically in the last couple decades.[11] Pigs, like chickens, are confined indoors in highly crowded conditions. Their natural desires -- to wallow in the mud, root in the ground for food, build nests, interact with their mothers when young -- all are frustrated. As a result various neurotic behaviors often occur, such as biting each other's tails (which the industry responds to by cutting their tails off) or chewing incessantly on metal bars. Unsuited to the hard concrete or metal floors and bred for weight maximization, most pigs develop foot, joint or bone injuries. The majority of pigs are slaughtered at the age of about 5-6 months, only about 1/20 of what the normal lifespan of a pig could otherwise be. Breeding sows are allowed to live longer in order to produce more pigs. These breeding animals are kept almost constantly pregnant. They are generally confined in tight stalls, with no ability to even turn around in their stall. They cannot fulfill their normal instincts such as nest-building in preparation for birth. After giving birth, the sows generally are only allowed to nurse for a short time (about two weeks) before the piglets are taken away. Even during the time of nursing the piglets are generally kept in an adjoining stall, separated from the mother. After the piglets are taken away the sow is re-impregnated and the cycle begins again.

"Beef" Cattle – Unlike most chickens and pigs, beef cows typically still spend the early part of their lives on pastures. Growing percentages of cattle spend the final part of their lives, however, in feedlots. In these feedlots they are densely packed together, often provided with no shelter or shade, and are fed massive quantities of grain to speed up their weight gain. This heavily grain-based diet, in addition to being extremely wasteful as a use of food (a point that will be discussed

[11] For detailed discussion of the treatment of pigs on factory farms, see Singer and Mason, *Ethics*, 42-55; Kneidel and Kneidel, *Veggie Revolution*, 56-65.

more fully below), causes a wide array of problems for the cattle, especially very serious gastrointestinal discomfort and liver problems. Beef cattle are also routinely subjected to numerous painful procedures such as being branded, dehorned, and castrated, all without the use of anesthesia. While a cow can live up to 20 years, feedlot cattle are generally killed around the age of 14 months.[12]

Dairy Cows – In contrast to beef cattle, which have access to pasture for at least part of their lives, most modern dairy cows never are allowed to graze. Rather, they are kept in very confined quarters, either indoors or in muddy feedlots, and are milked several times each day by industrial machines. The modern dairy cow produces at least three times as much milk as the typical cow of the 1950s. This increased production takes a massive toll of the bodies of the cows, resulting in serious health problems. Among the most common problems are mastitis (a very painful inflammation of the udders) and debilitating and painful leg injuries from calcium depletion. To maintain milk production the cows are kept almost constantly pregnant, usually being artificially inseminated. They typically are separated from their calves within a day of giving birth.[13] Males dairy calves, which are of no use in producing milk, are generally slaughtered shortly after birth or sold to be raised for veal or beef. Those calves that are raised for veal are typically chained at the neck in a tiny stall for their entire lives, unable to even turn around. They are allowed no exercise and are fed a diet that deliberately excludes roughage and iron to keep the calves' flesh

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[12] For discussion of beef cattle, see Singer and Mason, *Ethics*, 60-68; Kneidel and Kneidel, *Veggie Revolution*, 86-91.

[13] For discussion of dairy cows, see Singer and Mason, *Ethics*, 55-60; Kneidel and Kneidel, *Veggie Revolution*, 91-95.

pale. These veal calves are generally slaughtered around the age of fifteen weeks.[14] The female dairy cows are themselves past their peak of productivity within a few years and are usually slaughtered around the age of four or five. For all of these animals, the process of transportation and slaughter entails additional forms of both physical and mental suffering.[15]

In all, more than 50 billion land animals (and billions more sea creatures) are killed worldwide for food each year.[16] We'll return to a discussion of the ethical implications of these realities and the theological grounds for viewing the suffering and killing of animals as morally urgent issues later in this paper. First, however, let's examine some of the other impacts of modern forms of meat production, especially the impacts on world hunger and ecology.

World Hunger

The world currently produces far more food than is needed to feed every person alive.[17] At the same time, nearly a billion people (over 1/7 of the world's population) are chronically hungry. The number of hungry persons has increased considerably in the past several years. The United Nations' Food and Agriculture Organization (FAO) estimates an increase of more than 115 million hungry persons during 2007 and 2008 alone, primarily due to rising food prices.[18]

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[14] For discussion of the veal industry, see Singer and Mason, *Ethics*, 58-59; Kneidel and Kneidel, *Veggie Revolution*, 95-96.

[15] See Eisnitz, *Slaughterhouse.*

[16] An estimate of 56 billion land animals being killed for food each year is given in Gowri Koneswaran and Danielle Nierenberg, "Global Farm Animal Production and Global Warming," *Environmental Health Perspectives* 116, no.5 (May 2008): 578.

[17] See Frances Moore Lappé, Joseph Collins, and Peter Rosset, *World Hunger: Twelve Myths*, rev. ed. (New York: Grove, 1998), 8-14.

[18] See FAO, "Number of Hungry People Rises to 963 Million" (December 9, 2008), http://www.fao.org/news/story/en/item/8836; FAO, "Briefing Paper: Hunger on the Rise" (September 17, 2008), http://www.fao.org/newsroom/common/ecg/1000923/en/hungerfigs.pdf.

Numerous factors contribute to the persistence of massive hunger in a world of abundant food production. One newer factor that has received considerable attention is the use of large quantities of grain, especially corn, for biofuel. This has contributed to higher food prices by decreasing the supply of grains available for food. The World Bank, for example, estimates that "the grain required to fill the tank of a sports utility vehicle [one time] with ethanol…could feed one person for a year."[19] The demand for biofuels also provides incentives to shift land from food to fuel production.

Far more wasteful than grain-based biofuels, however, is the global livestock industry. While approximately 100 million tons of grain were diverted to ethanol production in 2008, around eight times that amount, nearly 800 million tons, were fed to livestock.[20] The conversion of grains, beans, and other food products into meat is enormously inefficient. It is estimated, for example, that it takes approximately 12-16 pounds of grain fed to feedlot cattle to produce 1 pound of meat.[21] Ratios for other animals are lower, but in all cases there is significant inefficiency. The average ratio for commonly raised livestock is estimated to be between 6:1 and 8:1. This results in a massive loss of the nutritional content that is available for human consumption. For example, with regard to protein, it is estimated that it takes an average of 6 lbs. of grain/bean protein fed to an animal to produce 1 lb. of animal protein. This involves a loss of

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[19] World Bank, "Biofuels: The Promise and the Risks" (2008), 2.

[20] George Monbiot, "The Pleasures of the Flesh," *The Guardian* (April 15, 2008), http://www.monbiot.com/archives/2008/04/15/the-pleasures-of-the-flesh.

[21] John Robbins, *The Food Revolution: How Your Diet Can Help Save Your Life and the World* (Berkeley, CA: Conari, 2001), 293.

protein available for human consumption of around 83%.[22] It is therefore the case that many more people can be fed if grains, beans, and other food items are consumed directly by humans than if these foods are cycled through livestock. This wastefulness of modern meat production is the central (and often overlooked) factor that explains what happens to all the "extra" food that the world currently produces.[23] Ethicist James Rachels provocatively states:

> What reason is there to waste this incredible amount of food? Why raise and eat animals, instead of eating a portion of the grain [and beans, etc.] ourselves and using the rest to relieve hunger?…The only reason for preferring to eat meat is our enjoyment of its taste; but this is hardly a sufficient reason for wasting food that is desperately needed by people who are starving. It is as if one were to say to a hungry child: "I have eight times the food I need, but I can't let you have any of it, because I am going to use it all to make myself something really tasty.[24]

In response to vegetarian arguments about the impacts of meat consumption on world hunger, it is often objected that one person deciding to eat less meat will not of itself lead directly to the hungry being fed. While there is truth to this statement, there are several important caveats. First, if one donates the money saved from reduced meat consumption to anti-hunger efforts, the reduced meat consumption of even one person could result in a reduction in hunger. Second, when many people make a choice to lessen meat consumption, the decreased demand for feed crops should contribute to lower prices for grains and other foods. This would enable some people to afford adequate food who otherwise could not. Less demand for meat could also

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[22] David Pimentel and Marcia Pimentel, "Sustainability of Meat-Based and Plant-Based Diets and the Environment," *American Journal of Clinical Nutrition* 78 (2003), 661S.

[23] It should be noted that raising animals entirely on pasture does not have a negative impact on human food supply if the land being used for pasture is unsuitable for crop production. Rather, such practices can enhance total food supply. Only a tiny fraction of the world's current livestock production, however, meets these criteria. And even in these cases there are other ethical issues to be considered, as will be discussed below.

[24] James Rachels, "Vegetarianism and 'The Other Weight Problem,'" in *World Hunger and Moral Obligation*, ed. William Aiken and Hugh LaFollette (Englewood Cliffs, NJ: Prentice-Hall, 1977), 185.

reduce the pressure to take over land currently being used by small farmers to produce food in order to convert it into land for feed crops.

Reduced meat consumption by the world's wealthy won't by itself bring about the far-reaching structural changes needed to end hunger. Only broad-based social movements for political and economic democracy can do that. Reduced meat consumption, however, is one essential component of what an effective response to hunger requires.

Ecology

In addition to negative impacts on hunger, high levels of meat consumption are also having a wide array of devastating environmental consequences. The negative ecological impacts of the livestock industry were the focus of a 2006 report of the UN Food and Agriculture Organization (FAO) entitled *Livestock's Long Shadow: Environmental Issues and Options*. "The livestock industry," the UN report stated, "emerges as one of the top two or three most significant contributors to the most serious environmental problems, at every scale from the local to the global."[25] Among the problems to which the livestock industry is a major contributor are high levels of fossil fuel usage, global climate change, air pollution, deforestation, loss of biodiversity, land degradation, water scarcity, and water pollution.

Fossil Fuel Usage:

According to a study by geophysicists at the University of Chicago, it takes on average approximately 50 calories of fossil fuel energy to produce 100 calories of food energy from vegan (plant-based) sources. In contrast, it takes approx 500 calories of fossil fuel energy to produce 100 calories of factory-farm chicken or milk. In other words, it takes about 10 times as

[25] FAO, *Livestock's Long Shadow*, xx.

much fossil fuel energy to produce the chicken or milk as to produce the vegan food. It takes even more fossil fuel energy to produce grain-fed beef, approximately 32 times more than needed for the vegan food.[26] Other studies (with a focus on protein content) have shown similar results, estimating for example that it takes on average 54 calories of fossil fuel to produce 1 calorie of protein from grain-fed beef whereas producing 1 calorie of protein from soybeans would require only 2 calories of fossil fuel energy, about 1/27 of the energy needed to produce the beef.[27]

Climate change:

With regard to climate change, the United Nations' *Livestock's Long Shadow* report reveals the astounding fact that the livestock industry is responsible for more greenhouse gas emissions than all forms of transportation (cars, trucks, airplanes, etc.) combined![28] This contribution to greenhouse gases takes numerous forms, including the vast amounts of energy used to produce all the crops that are fed to livestock, massive deforestation for grazing cattle and growing animal feed (which releases huge quantities of carbon and reduces the capacity for carbon absorption), the heavy use of energy in factory farms, and the highly potent greenhouse gases that are emitted by the animals themselves and from their decaying manure. Ruminants such as cows and sheep, for example, emit huge quantities of methane through exhaling/burping and flatulence. Methane is also a by-product of the anaerobic decomposition of manure. Methane

[26] Michael Jacobsen, *Six Arguments for a Greener Diet: How a More Plant-Based Diet Could Help Save Your Health and the Environment* (Washington, DC: Center for Science in the Public Interest, 2006), x.

[27] Robbins, *Food Revolution*, 266.

[28] FAO, *Livestock's Long* Shadow, xxi. In total, the meat industry accounts for nearly one-fifth (approximately 18%) of total greenhouse gases measured in CO_2 equivalents. It is responsible for an estimated 9% of anthropogenic (i.e. human-caused) CO_2, 37% of anthropogenic methane, and 65% of anthropogenic nitrous oxide.

is 23 times as strong of a greenhouse gas as CO_2. Nitrous oxide, an even stronger greenhouse gas with 296 times the global warming potential of CO_2, is released in large quantities from the decomposition of manure and is also a by-product of the synthetic fertilizers typically used in growing animal feed.

Because methane cycles fairly quickly out of the atmosphere in comparison with other greenhouse gases and meat production is a main cause of methane, it has been argued that one of the quickest ways to reduce human impacts on global warming would be through reduced meat consumption, especially consumption of cows, which would result in smaller numbers of the animals being raised.

Overall, it has been estimated in a study by two University of Chicago geophysicists that switching from a standard American diet to a vegan diet would result a reduction per person of about 1.5 tons of CO_2 equivalents each year. This, it should be noted, is a 50% greater greenhouse gas reduction than would be obtained in a year by driving a hybrid Toyota Prius instead of a standard sedan for the typical amount of miles driven annually in the U.S.[29] A study by researchers at the National Institute of Livestock and Grassland Science in Japan concluded that the production of a single pound of beef is typically responsible for as much greenhouse gas emissions as driving around 70 miles in an average European car.[30]

Dr. Rajendra Pachauri, the chair of the UN's Intergovernmental Panel on Climate Change (IPCC), the world's most distinguished body of climate change experts, has issued a strong call

[29] Data from this study by Drs. Pamela Martin and Gidon Eshel of the University of Chicago is cited in Co-op America, "Eat Less Meat, Cool the Planet," https://www.coopamerica.org/pubs/realmoney/articles/lessmeat.cfm.

[30] Cited in Mark Bittman, "Rethinking the Meat Guzzler," *New York Times* (January 27, 2008), http://www.nytimes.com/2008/01/27/weekinreview/27bittman.html. The exact figures given by Bittman are that 2.2 pounds of beef (1 kg.) is responsible for greenhouse gas emissions equivalent to driving 155 miles in an average European car.

for a reduction in meat consumption. "Please eat less meat," he has pleaded, emphasizing that "meat is a very carbon intensive commodity."[31] "In terms of immediacy of action and the feasibility of bringing about reductions in a short period of time," Pachauri states, "it [reduced meat consumption] clearly is the most attractive opportunity." He suggests that people should "give up meat for one day [a week] initially, and decrease it from there."[32]

Air pollution:

In addition to global warming gases, the livestock industry is also a major contributor to other forms of air pollution. Approximately two-thirds of anthropogenic ammonia, which contributes significantly to acid rain and the acidification of ecosystems, is due to livestock production.[33] Factory farms also produce a variety of other foul-smelling and/or toxic gases, making air quality often extremely unhealthy and unpleasant in areas surrounding these facilities, as anyone living or driving near a factory farm can readily attest.[34]

Deforestation and loss of biodiversity:

The livestock industry is a primary driver of deforestation, exceeding by far any other cause. It is estimated, for example, that approximately 70 percent of previously forested land in the Amazon is now occupied by pasture, and crops to be used as animal feed cover a large part of

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[31] "Lifestyle Changes Can Curb Climate Change: IPCC Chief" (January 15,2008), http://afp.google.com/article/ALeqM5iIVBkZpOUA9Hz3Xc2u-61mDlrw0Q.

[32] Juliette Jowitt, "UN Says Eat Less Meat to Curb Global Warming," *The Observer* (Sept. 7, 2008), http://www.guardian.co.uk/environment/2008/sep/07/food.foodanddrink.

[33] FAO, *Livestock's Long Shadow*, xxi.

[34] For detailed discussion of the numerous forms of air pollution caused by the livestock industry, see ibid., 79-123; Jacobsen, *Six Arguments*, 103-112.

the remainder.[35] While logging and small-scale farming (by poor people denied access to better land elsewhere) play lesser roles, the vast majority of rainforest destruction in the Amazon has been connected with the meat industry. Similar patterns prevail elsewhere. This destruction of rainforest and other forested land not only exacerbates global warming but is also a primary contributor to loss of biodiversity through habitat destruction. The livestock industry also contributes to biodiversity loss through various forms of pollution, desertification (caused especially by overgrazing on marginal land), overfishing (about 1/4 of the world's fish catch is fed to livestock), and other causes.[36]

Land degradation:

Along with deforestation and desertification, the livestock industry contributes to land degradation in numerous other ways. Production of livestock feed crops, for example, is a major contributor to soil erosion and to the toxic contamination of soil with agricultural chemicals. Also, the animals themselves, especially cattle, often severely degrade the soil that they walk on through compaction and contributions to erosion.[37]

Water Usage and Water Pollution:

The raising of livestock requires massive amounts of water, especially for the irrigation of feed crops and pasture and in the daily operations of factory farms. It is estimated that a typical pound of U.S. beef requires about 2500 gallons of water to produce. In contrast, a typical

[35] FAO, *Livestock's Long Shadow*, xxi.

[36] "[T]he livestock sector may well be the leading player in the reduction of biodiversity, since it is the major driver of deforestation, as well as one of the leading drivers of land degradation, pollution, climate change, overfishing, sedimentation of coastal areas and facilitation of invasion by alien species." Ibid., xxiii. For detailed discussion of the livestock industry and biodiversity loss, see ibid, 181-218.

[37] For discussion of livestock-related land degradation, see Jacobsen, *Six Arguments*, 73-85.

pound of potatoes takes only about 24 gallons of water to produce, the beef thus requiring about 100 times as much water as the potatoes.[38] It is expected that by the year 2025 approximately 64% of the world's population will live in water-stressed basins, thus making a diet with high water demand increasingly problematic.[39]

In addition to high water usage, the livestock industry is also one of the main polluters of water. This takes the forms especially of pollution caused by the agricultural chemicals used in growing animal feed and the waste products of the massive feedlots and factory farm operations. A typical factory farm can produce an amount of excrement and urine similar to that of a small city, but without the sanitation regulations that pertain to human waste. Livestock in the United States, for example, produce 130 times as much waste as does the human population.[40] Much of this waste ends up in the local waters, either by seepage from lagoons where it is stored or by being sprayed onto fields and then running off into the waters when it rains. From there it may travel downstream causing additional problems elsewhere. The UN study states that the livestock industry is very likely "the largest sectoral source of water pollution" in the world.[41]

Discussing the overall environmental impacts of livestock production, the WorldWatch Institute declares: "[A]s environmental science has advanced, it has become apparent that the

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[38] Robbins, *Food Revolution*, 236.

[39] FAO, *Livestock's Long Shadow*, xxii.

[40] Ed Ayres, "Will We Still Eat Meat?," *Time* (November 8, 1999), http://www.time.com/time/magazine/article/0,9171,992523,00.html.

[41] The livestock industry "is probably the largest sectoral source of water pollution, contributing to euthropication, 'dead zones' in coastal areas, degradation of coral reefs, human health problems…and many others. The major sources of pollution are from animal wastes, antibiotics and hormones, chemicals from tanneries, fertilizers and pesticides used for feedcrops, and sediments from eroded pastures." FAO, *Livestock's Long Shadow*, xxii. For detailed discussion of these topics, see ibid., 125-179; Jacobsen, *Six Arguments*, 87-101.

human appetite for animal flesh is a driving force behind virtually every major category of environmental damage now threatening the human future - deforestation, erosion, fresh water scarcity, air and water pollution, climate change, biodiversity loss, social injustice, the destabilization of communities, and the spread of disease."[42] According to WorldWatch president Christopher Flavin, "[t]here is no question that the choice to become a vegetarian or lower meat consumption is one of the most positive lifestyle changes a person could make in terms of reducing one's personal impact on the environment."[43]

Impacts on Rural Communities:

In addition to negative impacts on the ecology of rural communities, the factory farm industry has also contributed greatly to the overall decline of the social fabric in many such places. A major causative factor in this decline has been the undermining of small livestock farmers who find themselves unable to compete with the factory farm operations. This is due in large part to the direct and indirect subsidies that the factory farms receive, including the fact that the factory farms are not held responsible for the ecological costs of their activity.

Working Conditions in the Meat Industry:

Along with negative impacts on animals, world hunger, ecology, and rural communities, modern forms of meat production also cause much harm to persons working in the meat industry. Workers in factory farms, for example, are routinely subjected to high levels of toxic substances

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[42] Worldwatch Institute, "Meat: Now It's Not Personal, But Like It or Not, Meat-Eating is Becoming a Problem for Everyone on the Planet." *Worldwatch Magazine* (July/August 2004), 12; http://www.usc.uwo.ca/EnviroWestern/EnviroTipsLinks/WorldWatchArticle.pdf.

[43] Cited in Earthtalk column (February 24, 2008) , website of *E Magazine*, http://www.emagazine.com/view/?4100.

(e.g. hydrogen sulfide, ammonia, particulate matter, volatile organic compounds, antibiotic-resistant bacteria) in the air of the factory farm buildings and their surroundings.[44] Similarly, working conditions in meatpacking plants are horrendous. These conditions include exposure to huge quantities of blood, the sounds of terrified animals, and an extremely fast assembly line that entails the use of dangerous sharp tools to cut up the animals. Meat processing has the highest injury rate and highest annual turnover rate of any occupation in the United States. Many slaughterhouse employees are undocumented immigrants, who are unable to openly complain or organize on behalf of better working conditions for fear of being fired or deported. The horrible conditions in these plants are well-documented in the Human Rights Watch report *Blood, Sweat, and Fear: Workers' Rights in U.S. Meat and Poultry Plants*.[45]

Human Health:

An additional important factor to consider with regard to dietary choices is human health. Numerous health benefits are associated with reduced levels of meat consumption in comparison with the standard U.S. diet. The American Dietetic Association's Position Paper on Vegetarian Diets, for example, states: "Studies indicate that vegetarians often have lower morbidity and mortality rates….Not only is mortality from coronary artery disease lower in vegetarians than in nonvegetarians, but vegetarian diets have also been successful in arresting coronary artery disease. Scientific data suggest positive relationships between a vegetarian diet and reduced risk for...obesity, coronary artery disease, hypertension, diabetes mellitus, and some types of

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[44] See http://www.factoryfarm.org/?page_id=24.

[45] Human Rights Watch, *Blood, Sweat, and Fear: Workers' Rights in U.S. Meat and Poultry Plants* (New York: Human Rights Watch, 2004), http://www.hrw.org/en/reports/2005/01/24/blood-sweat-and-fear.

cancers."[46] Additional health advantages of vegetarian diets that are often cited include lower levels of osteoporosis, gall stones, and kidney disease, among others. Vegans (who avoid dairy products and eggs as well as meat and fish) experience the strongest health advantages.

In addition to the hazards of excess saturated fat and cholesterol and excess protein, animal products are concentrated sources of various toxins that accumulate in animal fat, such as agricultural chemicals. Non-organic animal products also often contain significant residues of the hormones and antibiotics used in factory farm production. Animal products are also sources of numerous harmful food-borne bacteria such as salmonella (all of the recent salmonella outbreaks, including those in spinach, peanuts, etc. are ultimately traceable back to animal manure) and even viruses such as bird flu which is thought to have originated in densely crowded factory farm conditions in Asia.[47]

Ethical Implications?

So far in this paper a variety of data has been presented on the negative impacts of modern forms of meat production. What are the ethical implications of this analysis, particularly in the light of the principles of Catholic Social Teaching (CST)? Even apart from the treatment of animals, it seems clear that a strong moral case can be made against factory farm meat production on the basis of concern for ecology,.world hunger, and the rights of workers. Principles of CST such as an option for the poor, the dignity of labor, an affirmation that the goods of the earth belong to all (and that all have a right to food), and an affirmation of

[46] Cited in Robbins, *Food Revolution*, 15.

[47] Discussion of the health hazards of a meat-based diet can be found in Jacobsen, *Six Arguments*, 17-72. Also see works by Neal Barnard, M.D, John McDougall, M.D, Michael Klaper, M.D., and the website of the Physicians Committee for Responsible Medicine, http://www.pcrm.org.

ecological concern provide compelling reasons for avoiding the consumption of meat (and dairy products and eggs) produced in factory farm conditions.

To argue on these grounds alone, however, would ignore the need to grapple with the profound moral and theological issues that accompany human-caused animal suffering. Are there grounds for seeing animal suffering as a compelling moral issue? Philosophers such as Peter Singer and Tom Regan have made strong cases that there are. Singer develops a utilitarian argument that focuses on sentience and the capacity to suffer as the basis of moral consideration. Regan develops a rights-based approach that focuses on animals as the "subject of a life" with capacities for awareness, concept formation, memory, beliefs, and desires. According to Regan this moral status of "subject of a life" applies most clearly to mammals over the age of one year, but he argues for giving the benefit of the doubt to younger mammals and many non-mammalian species as well. Both Singer and Regan, not surprisingly, see factory farming of animals as deeply morally problematic.[48]

Less attention has been devoted to the moral status of animals in the field of theology, but some very important pioneering work has been done, especially by British theologian Andrew Linzey. Linzey develops a notion of "theos-rights." His basic argument is quite simple but powerful. God is creator, God's creation is good, and God does not want any of God's creatures to suffer needlessly. Causing unnecessary suffering to animals therefore violates the right of God to have God's creation respected. "Since God's nature is love," says Linzey,

> and since God loves creation, it follows that what is genuinely given and purposed by that love must acquire some right in relation to the Creator. I do not see how

[48] See especially Peter Singer, *Animal Liberation*, rev. ed. (New York: Avon Books, 1990); Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 1983). A good overview of the work of Singer, Regan, and other philosophers and theologians concerned with the ethical treatment of animals can be found in Lisa Kemmerer, *In Search of Consistency: Ethics and Animals* (Boston: Brill, 2006).

> God can be the kind of God as defined by trinitarian doctrine [and be] morally indifferent to the creation which is sustained, reconciled, and which will in the end be redeemed. To posit that the Creator can be indifferent to creatures, especially those who are indwelt by the Spirit, is ultimately to posit a God indifferent to his or her own nature and being.[49]

Numerous biblical passages are cited to buttress this argument, such as the Genesis stories that declare the goodness of creation and describe humanity as being vegetarian prior to the Fall and the Flood, the inclusion of animals in some of the biblical covenants, various rules concerning proper treatment of animals, and passages such as the final verse of the book of Jonah in which God's compassion for the cattle of Nineveh is given as one of the reasons that God does not destroy the city.[50]

Linzey acknowledges that humans have a special place within creation and have been granted "dominion" by God. He argues that what dominion implies, however, is not some sort of despotism, but is rather the responsibility to relate to the world lovingly as God does. He suggests that the example of Jesus provides a model to follow. In Jesus, God's power or dominion over creation is expressed in the form of selfless love and service: "God's power," Linzey states, "is expressed in powerlessness, in condesension (*katabasis)*, humility, and sacrificial love...The lordship of Christ is expressed in service."[51] Jesus expresses special concern for those who are most defenseless, such as children and the poor. Linzey suggests that if Christians are to model the dominion exercised by God then traits such as these -- humility, compassion, service, concern for the defenseless -- must characterize their actions, including their actions in relation to animals.

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[49] Andrew Linzey, *Animal Theology* (Urbana: University of Illinois Press, 1995), 24-25.

[50] For discussion of God's concern for animals in the Bible, see Andrew Linzey and Dan Cohn-Sherbok, *After Noah: Animals and the Liberation of Theology* (London: Mowbray, 1997).

[51] Andrew Linzey, *Christianity and the Rights of Animals* (New York: Crossroad, 1987), 28.

The suffering of animals in factory farms, Linzey argues, fundamentally contradicts the Christian call to proper stewardship of creation. Interestingly, Pope Benedict XVI (in an interview prior to becoming pope) has expressed similar concerns about factory farming. "Certainly," Cardinal Ratzinger said, "a sort of industrial use of creatures, so that geese are fed in such a way as to produce as large a liver as possible, or hens live so packed together that they become just caricatures of birds, this degrading of living creatures to a commodity seems to me in fact to contradict the relationship of mutuality that comes across in the Bible." It must be recognized, says Ratzinger, that animals "are God's creatures…, creatures we must respect as companions in creation."[52] Similarly, the *Catechism of the Catholic Church* states: "Animals are God's creatures. He surrounds them with his providential care. By their mere existence they bless him and give him glory. Thus men owe them kindness….It is contrary to human dignity to cause animals to suffer or die needlessly."[53]

Concerns for the suffering of animals combined with concerns for world hunger, ecology, human health, and the conditions of workers in the meat industry make a compelling moral case, I would contend, for the total boycott of meat (and dairy and eggs) produced in factory farm conditions for anyone with access to alternatives. Does the argument being developed here, however, necessarily imply vegetarianism? What about the eating of animals that are raised "humanely" and that get the vast majority of their diet from grazing (particularly on land that is not suitable for crop production) or from parts of food crop plants that are not edible for humans?

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[52] Joseph Cardinal Ratzinger, *God and the World: A Conversation with Peter Seewald* (San Francisco: Ignatius Press, 2002), 78-79.

[53] *Catechism of the Catholic Church* (Vatican City: Libreria Editrice Vaticana, 1994) no. 2416. For this and other Catholic statements on animals, see http://www.hsus.org/religion/profiles/profile_template.html.

Several considerations are important here. First, even many animals raised "humanely" are subject to procedures such as debeaking, dehorning, etc.that could be seen as ethically problematic. Also, the male chicks of laying hens in these farms are still generally killed at birth. And all types of animals may still be very crowded together. This is a criticism made even of producers such as Polyface Farm, a farm that has been held up by many persons (e.g. Michael Pollan in *The Omnivore's Dilemma*) as a model of humane animal raising.[54] Also, there are still the problematic realities of inhumane transportation and slaughter at the end of the animals' short lives, since even most "humanely" raised animals are sent to conventional slaughterhouses.

Other issues of concern include the fact that even "humanely" raised livestock still can contribute to various ecological problems (such as methane production or water pollution) and the fact that the products of these animals tend to be considerably more expensive. The money saved by eating a vegetarian diet instead, it is suggested, could be used to support important efforts such as poverty and hunger reduction.

Even apart from these issues, there remains the fundamental question of whether killing an animal for food is itself morally acceptable when other alternatives are available. This question is especially important when the animals are killed at a young age, as is generally the case even in "humane" meat production. On the one hand, I would tend to agree with Peter Singer and Jim Mason who state that anyone who consistently purchases more humanely and sustainably raised animal products deserves praise for engaging in practices that are significantly better than the standard practices of our culture, even if a diet that totally excludes animal products could still be seen as morally preferable. Indeed, I would suggest that those who are conscientiously seeking to reduce their consumption of factory farm products (even while not

[54] For critiques of the conditions for animals on Polyface Farm, see Singer and Mason, *Ethics*, 255-257.

eliminating them entirely) are also primarily to be commended and encouraged, rather than chastised for falling short of a moral ideal. On the other hand, it seems to me that there are profound theological issues at stake that should push Christians to avoid the consumption of even "humanely" raised animals and animal products when alternative sources of nutrition exist, as they do for virtually all First World Christians and many Christians in other parts of the world as well.[55]

The most fundamental reason for choosing a diet free of animal products is the centrality of nonviolence, compassion, and mercy in the Christian life. When we can live without causing suffering or death, it is incumbent upon us, as disciples of a compassionate God, to do so. Isaac the Syrian (an 8th century bishop of Nineveh) has a beautiful passage on this call to embody God's mercy and compassion in our lives. Responding to the question, "What is a compassionate heart?," St. Isaac states:

> It is a heart burning with love for the whole creation, for men, for the birds, for the beasts...for all creatures. He who has such a heart cannot see or call to mind a creature without his eyes being filled with tears by reason of the immense compassion which seizes his heart; a heart which is softened and can no longer bear to see or learn from others of any suffering, even the smallest pain being inflicted upon a creature. That is why such a man never ceases to pray also for the animals, for the enemies of truth, and for those who do him evil, that they may be preserved and purified. He will pray even for the reptiles, moved by the infinite pity which reigns in the hearts of those who are becoming united with God.[56]

[55] The case of persons without access to alternatives, such as impoverished persons who lack adequate land or income to feed their family and who rely on small-scale livestock raising for survival, is a very different moral issue. In these circumstances I think the use of animal products for food can be morally acceptable, with the imperative to treat the animals as humanely as possible.

[56] Cited in Linzey, *Animal Theology*, 56; Linzey and Cohn-Sherbok, *After Noah*, 102. Also see also Vladimir Lossky, *The Mystical Theology of the Eastern Church* (London: J. Clarke, 1957), 111.

"To kill without the strict conditions of necessity," asserts Linzey, "is to live a life with insufficient generosity."[57] "What does it say about us," asks Colleen Patrick-Goudreau, "that when given the opportunity to prevent cruelty and violence, we choose to turn away – because of tradition, culture, habit, convenience, or pleasure?"[58] Christians are called to incarnate the love and compassion of God and to be witnesses to the Kingdom of God. Just as the Bible begins with a vision of a vegetarian humanity, so too the eschatological vision of the biblical prophets speaks of a peaceable kingdom in which humans and animals live together without harm or violence. The letters of Paul in the New Testament likewise speak of the redemption and reconciliation of all creation, a vision that is not confined merely to humanity. By living a life that rejects unnecessary violence, including unnecessary violence against animals, Christians can be a living sign of this Kingdom. As Stanley Hauerwas and John Berkman state, Christian vegetarianism can be understood as a compelling "witness to the world that God's creation is not meant to be at war with itself."[59] Such a vegetarian lifestyle, assert Stephen Kaufman and Nathan Braun of the Christian Vegetarian Association, is "an important personal step toward living according to God's will,…respecting and caring for our own bodies, the environment, hungry people, and animals."[60] As such, it is a compelling way to exhibit responsible stewardship and to give honor to our Creator.

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[57] Linzey, *Animal Theology*, 135.

[58] Colleen Patrick-Goudreau, "From Cradle to Grave: The Facts Behind 'Humane' Eating," http://www.compassionatecooks.com/word/satya_sept_2006.pdf.

[59] Stanley Hauerwas and John Berkman, "A Trinitarian Theology of the 'Chief End' of 'All Flesh,'" in *Good News for Animals? Christian Approaches to Animal Well-Being*, ed. Charles Pinches and Jay McDaniel (Maryknoll, NY: Orbis Books, 1993), 72.

[60] Stephen Kaufman and Nathan Braun, *Good News for All Creation: Vegetarianism as Christian Stewardship* (Cleveland: Vegetarian Advocates Press, 2004), 58.

Additional Ethical Issues Concerning Diet:

So far this paper has just dealt with the consumption of meat and other animal products. Additional important ethical choices concerning food include whether to prioritize the purchase of organic, fair trade, and/or locally produced items, and whether or not to purchase genetically modified foods. While shortage of space precludes extensive discussion of these issues, it seems important to address each of them at least briefly in our consideration of ethical food choices.

Organic foods:

There are many serious problems associated with conventional modern industrial crop agriculture, just as with modern industrial animal agriculture. Among these problems are heavy dependence upon fossil fuels, high levels of greenhouse gas emissions (especially CO_2 and nitrous oxide), depletion of soil fertility, lower levels of carbon sequestration in the soil, high rates of soil erosion, and the toxic contamination of soil, water, air, food, and farmworkers by agricultural chemicals.[61] Organic agriculture and other forms of agroecology provide much needed alternatives to these unsustainable practices and are very worthy of support.[62] One significant consideration, however, is the often significantly higher cost of these products. This higher price for organics has multiple causes, including the fact that conventional agriculture is frequently heavily subsidized by governments and the fact conventional producers are not required to internalize the environmental and other costs of their practices. Given this higher

[61] The book *Fatal Harvest: The Tragedy of Industrial Agriculture*, ed. Andrew Kimbrell (Washington, DC: Island Press, 2002) provides an excellent overview of these issues.

[62] For good discussions of ecologically sustainable agricultural practices, see Miguel Altieri, *Agroecology: The Science of Sustainable Agriculture* (Boulder, CO: Westview Press, 1995); Paul Kristiansen, Acram Taji, and John Reganold, eds., *Organic Agriculture: A Global Perspective* (Ithaca, NY: Comstock, 2006).

consumer price, which could create an undue burden for the poor, any obligation to purchase organic products must therefore be understood as at least partially dependent upon available economic resources. If one can afford them, does an ethical imperative exist to purchase organic products? In general I think a strong case can be made that this is so, on the grounds of proper stewardship of God's creation. However, this imperative is not absolute. For example, if one were to purchase less expensive conventional products and then donate the money saved to organizations working to overcome world hunger or other very worthy causes, this too I believe can and should be viewed as a morally commendable course of action.

Genetically modified foods:

The issue of genetically modified foods is a complex one. There are, I believe, very compelling reasons to be quite cautious about these products, especially on health, environmental, and theological grounds.[63] It is important also to be aware of the likely socio-economic impacts of genetic engineering technologies, including the further concentration of the world's food supply in the hands of a few major corporations. While arguments are often made for genetic engineering of food on the grounds that it can help to feed the world by developing crops better suited to the difficult growing conditions faced by many farmers in the Third World or by enhancing the nutritional value of crops, in reality very little research money has been devoted to these goals. Rather, the vast majority of genetic engineering research in the field of agriculture has been devoted to projects such as the development of herbicide-resistant crops,

[63] Some good books on the genetic engineering of food include Miguel Altieri, *Genetic Engineering in Agriculture: The Myths, Environmental Risks, and Alternatives* (Oakland, CA: Food First Books, 2004); Michael Ruse and David Castle, eds., *Genetically Modified Foods: Debating Biotechnology* (Amherst, NY: Prometheus Books, 2002).

thereby enabling (primarily wealthy) farmers to use higher levels of herbicide without accidentally killing the crop they are growing.

Critics also contend that much of the argument for genetically engineered foods as a response to hunger fundamentally misdiagnoses the root cause of hunger as being a lack of adequate production, rather than a lack of social justice and equitable distribution of the world's resources. Where increased production is indeed needed, effective alternative means already exist that can be more fully implemented, e.g. various agroecological practices such as intercropping, succession planting, the use of "green manure" crops, the use of intensive raised beds, and others.[64] Given the availability of these alternatives and the potentially very serious dangers to health, ecology, and social justice that genetically engineered foods pose, high levels of caution seem prudent.

Fair Trade:

As most commonly used, the term "fair trade" refers to the purchase of goods that guarantee a fair price to producers and that meet certain standards for workers' rights and, often, environmental sustainability. In the agricultural realm fair trade frequently involves products produced by small-scale growers' cooperatives. The most commonly available fair trade items include coffee, cocoa, tea, bananas, and sugar. While some arguments have been made against fair trade (e.g. the claim that it distorts market mechanisms by artificially inflating prices), these arguments are not very convincing. At the same time, however, I would argue that there do exist potential drawbacks if current forms of fair trade are understood as being a solution to global

[64] For an excellent discussion of the socio-economic and environmental impacts of genetically modified foods see Miguel Altieri and Peter Rosset, "Ten Reasons Why Biotechnology Will Not Ensure Food Security, Protect the Environment and Reduce Poverty in the Developing World," *AgBioForum, 2* (1999): 155-162.

injustice rather than as being an interim measure to mitigate the damage of the current global economic system while more far-reaching structural reforms are pursued.[65] Fair trade as currently practiced depends upon the good will of consumers to willingly choose to purchase these products, even when cheaper products are available. Unfortunately, there is strong evidence that the majority of consumers will not do this. What is ultimately needed, instead, are structural reforms that ensure that every product produced and traded meets certain basic standards of worker fairness and ecological sustainability. Until then, choosing fair trade products whenever possible is generally a very commendable and valuable practice. As with organic products, however, the obligation to purchase such products need not be seen as absolute, even if one has the financial resources to do so. This is especially the case when a significant price differential exists and when only a small portion of the higher price will go back to the producers and much will go to for-profit middlemen, such as when one purchases fair trade products from some large transnational corporations. I would argue that in these circumstances a strong moral case could be made for purchasing the lower cost, non-fair trade products and then donating the difference in price to organizations that are working for structural change or that are engaged in the direct meeting of basic needs in the producing countries. In this way a greater share of funds would actually return to those communities.

Local foods:

In recent years a strong movement has developed encouraging the purchase of local foods. A variety of arguments are given for this practice, such as concern about the ecological

[65] Good discussions of fair trade can be found in Gavin Fridell, *Fair Trade Coffee: The Prospects and Pitfalls of Market-Driven Social Justice* (Toronto: University of Toronto Press, 2007); Laura Raynolds, Douglas Murray, and John Wilkinson, eds., *Fair Trade: The Challenges of Transforming Globalization* (New York: Routledge, 2007).

impacts of the long-distance transport of food, issues of transparency (one can visit local farms and witness their practices), the need to strengthen local economies, and the enhanced freshness, taste, and nutritional value of products that are consumed soon after harvest. All of these arguments have significant validity. The issues, however, are not always without ambiguity. For example, items produced in local greenhouses heated with fossil fuels could have greater environmental impact than products grown outdoors with less energy-intensive farming practices but transported from much further away. Similarly, if one drives a significant distance to a local farm or farmers' market to buy just a few produce items, this itself could entail more usage of fossil fuels than that which is saved by purchasing these locally produced foods. It is also important to recognize that buying local is generally not the food choice that has the greatest positive environmental impact. The most environmentally beneficial dietary change is reduced meat consumption, particularly reduced consumption of factory farm products. A study done by researchers at Carnegie Mellon University, for example, found that switching to a fully local diet for an entire year would on average entail reduced greenhouse gas emissions equivalent to driving about 1000 less miles per year in a typical car. Replacing the meat and dairy products in one's diet just one day per week for a year with non-animal sources, they estimate, would have a greater impact, the equivalent of driving about 1160 less miles per year.[66] Switching to a totally vegan diet would result in about an eight times greater reduction in greenhouse gas emissions than would buying all local foods. Of course one can seek to do both. Even here, however, there are some difficult issues to address. For example, is the good that is done by buying fair trade products from overseas (e.g. improving the lives of some of the world's poorest people) greater

[66] Erika Engelhaupt, "Do Food Miles Matter? Reducing Meat and Dairy Consumption May Be Even More Important," *Environmental Science and Technology* (April 16, 2008), http://www.organicconsumers.org/articles/article_11662.cfm.

than the harms that may be done by the long-distance transport of these products? These are complicated questions. It seems likely that most items are best purchased from local producers, while other items may for various reasons be best purchased from non-local sources.

Some Concluding Reflections:

Where does all of the above analysis lead us? I think the clearest implication is the need for a significant reduction in the consumption of factory-farm animal products, with the total elimination of these products being the preferred scenario. Such a dietary change can have many positive benefits for animals, ecology, world hunger, workers, and human health. As to the consumption of non-factory farm animal products, I believe that there are substantive reasons (especially for Christians) to avoid all such products when alternative forms of nutrition are available. At the same time, an adoption of less inhumane and more ecologically sustainable livestock raising practices, while not ideal, would still be far morally preferable to the present situation and persons engaging in such practices should be commended.

With regard to plant-based foods, there is a pressing need to switch from conventional methods of industrial crop agriculture to organic or near-organic practices. The moral imperative to purchase these products is subject to more qualifications, however, than the moral imperative to refrain from purchasing factory-farmed animal products. Similarly, there are important reasons to purchase fair trade products and locally produced items, but there are also certain circumstances in which alternative choices may be preferable or equally appropriate.

In all of these considerations it is important to stress the importance of humility and to avoid self-righteousness. Our primary task as Christians, in our dietary choices as in all other aspects of our lives, is to give witness to the love and compassion of God. It is this witness to

God’s love -- for humans, animals, and all of creation, including love for those persons whose actions cause the most harm -- that must always be the center of our concern.