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Animal Agriculture-- MOOOve to Sustainability

Animal Agriculture is defined as “the practice of breeding animals for the production of animal products” (MacLachlan 2017). This includes not only meat production, but also the production of dairy, animal fat, and eggs. In the pre-World War II Era, animal agriculture existed on a small scale. The time after the war proved to be a turning point in the American economy, as well as the animal agriculture industry. Both crop agriculture and animal agriculture became overwhelmingly more industrialized (Kunkel 2000). A study that looked into the industry emphasized how much it changed over the last few decades, in particular (Daigle 2010). Animal agriculture has become a sustainability problem, and if the industry continues to grow unchanged, it could result in a number of negative effects.

Before World War II, most meat and dairy producers used “farrow-to-finish” operations, where one farmer supervised every stage of production (Daigle 2010). From when livestock were born to when they were killed for consumption, they lived in the same location and were supervised by the same farmers. In the past few decades, large-scale operations have replaced these small, traditionally family owned, farrow-to-finish livestock operations (Daigle 2010). Livestock production has become sped up and impersonalized, treating the animals as products rather than animals. Many of these larger scale forms of animal product production came in the form of piggeries, feedlots, and chicken houses (Brinkmann 2016). Large scale operations are generally geographically concentrated, as opposed to spread out (Daigle 2010). Having all the livestock in one location tends to make running a large feedlot easier.

In recent years, concern has been expressed for issues surrounding the sustainability of the animal agriculture industry. Large scale operations seem to be taking over the industry, leaving little room for the small scale farmers of the past. Demand for meat and animal products is due to an ever-growing population, whose consumptions has led to a 20% increase in meat production in the last decade (Brinkmann 2016). The goal of the animal agriculture industry is to meet the demands of consumers, but the Brundtland Report acts as a global reminder that even this industry needs to heed the idea of sustainable development, or the idea that the industry should “meet the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations World Commission on Environment and Development 1987 qtd. in Capper 2013).

An increasing number of people have become concerned with the animal agriculture industry because of negative effects on the environment. Capper (2013) says: “Environmental stewardship is currently the area for which animal agriculture is under the most scrutiny, as many consumers perceive that animal-source foods have an unacceptable environmental cost.” Huge emphasis is placed on the fact that meat production accounts for 18% of greenhouse gas emissions and 30% of methane production (Brinkmann 2016). Those statistics do not even take into consideration the production of dairy products. Shields (2015) puts the 18% of greenhouse gas emissions into perspective by calculating that the animal agriculture industry accounts for more emissions than the entire transportation sector.

Climate change, being a hot topic in the current political climate, is discussed in relation to the vast greenhouse gas emissions. The greenhouse gas emissions from livestock contribute directly and indirectly to climate change. According to Shields (2015), “enteric fermentation and

manure associated emissions are direct, while production and transport of feed (including the fossil fuels used in manufacturing chemical fertilizers) and land use changes (such as conversion of forest to pasture and cropland) contribute indirectly.” Even so, the animal agriculture industry, especially in the United States, finds a way to remain unchanged, despite regulations. In December 2008, the Environmental Protection Agency (EPA) decided to exempt animal agriculture operations from adhering to emissions standards they had set prior (Daigle 2010). But, the environmental regulatory laws have “won” in some cases where Superfund and EPCRA have been used as grounds to sue both poultry and swine operations (Daigle 2010).

Greenhouse gas emissions are not the only environmental problem that the animal agriculture has faced scrutiny from. Brinkmann (2016) provides insight into the amount of land that is used to make animal agriculture possible. He says that meat production activities cover approximately 30% of Earth’s usable land, when livestock grazing and feed growth for livestock are accounted for. Livestock production also uses huge amounts of water. The EPA estimates that 56% of the water in the United States is used for producing feed for livestock (EPA qtd. In McCarthy 2015). Further, the EPA claims: “Animal agriculture is the leading cause of species extinction, ocean dead zones, water pollution, and habitat destruction” (EPA qtd. in McCarthy 2015).

Niman (2010) says that the number of farm animals in the United States is not necessarily the problem, but instead attributes the problem to being one of dispersion. Some of the environmental problems that have come into light may be able to be fixed if the production of animals was not so large scale and concentrated. In order for the industry to become more sustainable, a demand for sustainable products must exist. Although more than half of consumers

reported that they would spend more for environmentally friendly foods (Robinson & Smith 2002), much less would ACTUALLY spend more money on a sustainable product (Vermeir & Verbeke, 2006 qtd in Capper 2013). Regardless of what the consumer demands are, the scientific consensus is that animal agriculture makes a significant impact on greenhouse gas emissions, and uses a huge amount of both renewable and nonrenewable resources (FAO 2006; Pelletier & Tyedmers 2010 qtd. in Capper 2013). It's clear that animal-derived product production cannot be maintained for long without majorly degrading the environment.

Another issue of sustainability in the animal agriculture industry can be seen in a social aspect. Social Sustainability in terms of food has to do with nutrition foods provide, production, access, community, wellbeing, and diversity (Kebreab 2014). For people of many developing nations, consuming animals and their byproducts are necessary in order to maintain a healthy body (Neumann et al., 2002; Murphy & Lindsay, 2003; Randolph et al., 2007; Smith et al., 2012 qtd in Capper 2013). In these developing nations, owning livestock also improves social and economic security (Randolph et al. 2007; Godfray et al. 2010; McDermott et al. 2010; Smith et al., 2012 qtd in Capper 2013). Staal reports in a Los Angeles Times article (2017) that in developing countries, small small scale, less wealthy people own more livestock than large corporations. Staal (2017) discusses the numerous ways that policies favoring the poor have increased livestock ownership and improved the lives of people in developing nations, which in turn creates a "ripple effect" to the surrounding community. In contrast to mass production in developed nations, animal agriculture is not only sustainable in developing nations, but also vital to the growth and maintenance of their smaller local economies.

Food Security remains an issue in developed and undeveloped nations alike, despite growth in agricultural productivity (UN FAO 2010 qtd. In Kebreab 2014). The problem does not come in the form of food production, but distribution. It's difficult to get food physically to the people that need it (Brinkmann 2016). In developed countries, consumers have begun to show an interest in where their food comes from, especially animal products, in the last several years (Kebreab 2014). Misleading labeling and advertising practices lead to activist groups, who in turn, claim animal products are unsustainable. Sometimes consumers can become confused, making them refuse to buy even the most sustainable animal products (Capper 2013).

Another problem in social sustainability is the idea that large animal production facilities are placed in specific agricultural regions, leading to an environmental justice issue. Environmental justice, according to Brinkmann (2016), accounts for some social sustainability issues. This idea especially comes into play when one maps out where animals are farmed, and if their effects endanger or inconvenience the lives of the people inhabiting areas near the animals. Regions surrounding CAFOs (concentrated animal feeding operations) have reported adverse health effects (Wing and Wolf, 2000; Merchant et al. 2005; Mirabelli et al. 2006 qtd. In Kebreab 2017). These CAFOs are often found more frequently in areas of low socio-economic class, limiting the opportunities of the people who live there (Kebreab 2014). An instance in North Carolina reported in 2007 displayed that CAFOs were found disproportionately in areas stricken with poverty and areas with non-white residents (Kebreab 2014). Needless to say, CAFOs should not be placed unfairly in poor areas, and the people who live there should not have to deal with the adverse effects of living so close to a CAFO.

In terms of economic sustainability, animal agriculture faces a number of problems. After World War II, small, mixed use farms turned into huge farms only specializing in one animal (Daigle 2010). Economic efficiency was improved this way, and the structural changes were driven by capitalistic drives of competition and incentive to maximize profits (Daigle 2010). Feeding livestock has also become increasingly easier as time has gone on. Government subsidies for wheat and corn (Brinkmann 2016) provide cheap and plentiful food supplies for many a cow and pig in CAFOs. The centralization of production allowed large corporations to achieve huge profits while taking the capital out of the hands of small farmers, and government subsidies for feed made it easier to do so.

Technological advances in agriculture have made strides that allow for more than enough food to sustain the human population. Although remarkable, Blank (2008 qtd in Kebreab 2014) discusses the “technological treadmill” of the agriculture industry, and how it cannot sustainably grow forever. Eventually, the productivity has to cap. The agriculture industry cannot keep economically growing and growing to become more and more profitable, it just is not possible (Kebreab 2014). However beneficial to humans they may be, technological advancements are not holistic in nature. They have been driven by capitalistic drives of competition and incentive to maximize profits (Daigle 2010). Especially in the hog industry, the presence of production contracts have increased (Key and McBride 2003 qtd. In Kebreab 2014). Big corporations buy out small farms, and farmers accept the contracts for a variety of reasons. The end result is the bought out farm has to provide increased output each year. In turn, this forces the small, traditionally family-owned farms, to industrialize and turn into a more

mechanized operation (Brinkmann 2016). Overall, the economic sustainability of animal agriculture is a huge problem, and it cannot continue to grow uncapped.

One of the ‘problems’ faced when looking at how to make animal agriculture more sustainable is the multitude of approaches that can be taken to address the issue. As education and knowledge of some of the harmful environmental effects of meat production has spread, movements to reduce the demand for animal products have developed. This has turned into a community of people who avoid consuming animal flesh (vegetarians) and people who avoid all animal products (vegans).

Many vegans contend that: “The only way to sustainably and ethically live on this planet with 7 billion other people is to live an entirely plant based vegan diet.” (Anderson qtd in McCarthy 2015). It’s true; living a vegan lifestyle, at least in developed countries, is much more sustainable than a standard american diet. According to dietician and food blogger, Sharon Palmer, if all humans went completely meatless, greenhouse gas emissions would be cut by 63 percent (Palmer qtd. in Ransom 2015). Many people argue that especially in developed countries, creating less of a demand for animal products is the clear-cut sustainability answer.

From a sheer land-use standpoint, Brinkmann (2016) discusses the fact that it takes a lot less land to feed people on a meat free or meat-limited diet. Others, like Capper (2013), argue that there is not a “one-size-fits-all” approach, like some vegan and vegetarian activists may believe. Creating less of a demand for meat and animal products may also create less demand for the creation of more CAFOs, which have caused a slew of social sustainability issues. A push for more collaboration between industry, government, and education programs is called for to help consumers make more informed and responsible choices.

The idea of “sustainable intensification” in animal agriculture has also arisen. Sustainable intensification is defined as “a move towards improved productivity and efficiency whilst fulfilling the environmental, economic and social balance required for a sustainable system” (Capper 2013). Basically, this calls for increased productivity, but sustainable productivity. The Food and Agriculture Administration (FAO) (2006) concludes that sustainable intensification is key to animal agriculture and creating global food security (FAO qtd. in Capper 2013). It is crucial to making animal agriculture economically stable, and not in danger of being taken hold of by monopolies. The FAO should be using the idea of sustainable intensification to also be creating legislation to promote environmental justice in areas where animal products are being produced. The goal of the FAO as of now is to keep business as usual, but in a less harmful manner.

Environmental agriculture has some major environmental, social, and economic impacts. Overall, the demand for animal agriculture will probably decrease with less demand over the next decade, as more and more people seem to begin avoiding animal derived products in developed countries. Decreased demand will ultimately result in less harmful effects of the often un-sustainable practices used in the industry. Until then, more impactful legislation is needed to improve practices in animal farming. Education is also needed to inform consumers of purchases they are making in the supermarket. Animal agriculture, like most human practices, is harmful and degrading to people, the economy, and the Earth in some way. But, if steps are taken to minimize these harmful effects, the industry could be a whole lot LESS harmful.

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