

Factory Farming

Introduction

Perhaps the single greatest dilemma facing wealthy, democratic, post-industrial nations today is factory farming. The reasons for this have to do with the nature of the problem itself, however the reason that this problem is so intractable is that it goes almost completely unaddressed in our society. In the coming weeks, we will explore all aspects of this problem, by starting at the largest possible scope and then zooming to the granular. We will cover everything from the statistics of how factory farming works in the United States, the health effects of this nation's animal product heavy diet, the cognitive capacity of farmed animals, and the limited legal protections that exist for these animals.

Part I: The Statistics

"In God we trust, all others must have data."

-Cecil R. Reynolds

To begin to understand the magnitude of the problem facing the United States (and indeed, the rest of the world), we begin with a statistical analysis. Though this is indeed a global problem, for now let us analyze data from the United States.

First, some raw numbers. According to the [Humane Society of the United States](#), 9.2 *billion* animals are slaughtered for food every year in the United States, and that is not counting fish and shellfish. By far the vast majority of these animals are chickens, accounting for some 8.8 billion creatures killed annually. Next, come turkeys, with some 232 million individuals. After that pigs with approximately 115 million, next are cattle with 28 million, then ducks at 27 million, and finally sheep and lambs with a "mere" two million.

U.S. Slaughter Totals, by Species (1950 - 2015): Totals***

Updated June 25, 2015								
Year	Cattle	Chickens	Ducks	Hogs	Sheep & Lambs		Turkeys	Total
	(Thousands of animals)							(Billions of animals)
1950	17,901	N/A	N/A	69,543	12,852		N/A	0.1
1955	25,723	N/A	N/A	74,216	16,215		N/A	0.1
1960	25,224	1,644,026	10,086	79,036	15,899		70,702	1.8
1965	32,398	2,192,378	10,455	73,852	13,008		92,720	2.4
1970	35,416	2,946,294	11,833	87,012	21,354		105,549	3.2
1975	41,464	3,097,430	11,458	69,824	15,892		119,445	3.4
1980	34,116	4,132,177	16,875	97,174	11,322		159,071	4.5
1985	36,593	4,617,280	21,608	84,938	6,300		175,181	4.9
1990	33,439	6,022,450	20,913	85,432	11,403		271,199	6.4
1995	35,817	7,530,847	19,528	96,536	4,631		281,032	8
2000	36,416	8,426,141	24,494	98,106	3,527		268,069	8.9
2001	35,530	8,566,382	26,260	98,082	3,290		269,302	9
2002	35,888	8,716,099	23,998	100,378	3,351		271,244	9.2
2003	35,647	8,684,434	24,301	101,043	3,042		267,781	9.1
2004	32,880	8,895,748	25,967	103,573	2,906		254,308	9.3
2005	32,539	9,000,473	27,890	103,690	2,763		248,094	9.4
2006	33,849	8,968,666	28,025	104,842	2,766		254,716	9.4
2007	34,264	9,035,620	27,311	109,172	2,694		264,926	9.5
2008	34,365	9,075,261	24,149	116,452	2,556		271,245	9.5
2009	33,338	8,658,860	22,767	113,618	2,516		245,768	9.1
2010	34,249	8,790,478	23,627	110,260	2,458		242,619	9.2
2011	34,087	8,683,067	24,472	110,860	2,164		246,844	9.1
2012	32,951	8,576,194	24,183	113,163	2,183		250,192	9
2013	32,459	8,648,756	24,575	112,126	2,314		239,385	9.1
2014	30,170	8,666,662	26,368	106,876	2,309		236,617	9.1
2015	28,752	8,822,695	27,749	115,425	2,224		232,398	9.2

***USDA, National Agricultural Statistics Service (Farm Animal Statistics: Slaughter Totals), as posted by [HSUS](#)

Now of course all these animals, before they are slaughtered, require food to eat. These animals would eat mostly grass were they to live in the wild, and indeed, sometimes they still do. We are keeping our focus on the United States here, but anyone with some knowledge of the problem of deforestation in the Amazon knows that it is largely the result of cattle farms clearing forest to create grazing land. However in the United States, most farmed animals are fed a mixture of soy and corn, and in proportion with the astonishing number of animals killed each year, the amount of soy and corn required to feed them is enormous. Specifically, according to the Institute for Agriculture and Trade Policy, some 47% of soy and fully 60% of corn produced in the United States are eaten by farmed animals on factory farms. This, in a country where, based on data from the United States Department of Agriculture (USDA), 15.6 million families or 12.3% of the total face food insecurity.

Even more troubling than the amount of food required to sustain these artificially high populations of animals is the amount of water they consume. All food that farmed animals eat requires massive amounts of water to grow; in recent years, almonds have for example come under fire for requiring inordinate amounts of water to produce, particularly in California which is currently facing a water crisis. Because farmed animals consume such vast amounts of food, their "water footprint" is proportionally massive. First, let us consider the amount of water required to produce certain vegetables, fruits, and grains for human consumption. According to the online publication [World Water](#):

- corn requires between 1,000 and 1,800 liters of water per kilogram to produce,
- soybeans require between 1,100 and 2,000 liters of water per kilogram,
- wheat requires between 900 and 2,000 liters of water per kilogram,
- and apples a mere 700 liters of water per kilogram.
- The 'infamous' almond, according to Business Insider, requires more than 3,000 liters of water per kilogram, which sounds pretty bad until you start considering farmed animal food products.

According to [Water Footprint Network](#)

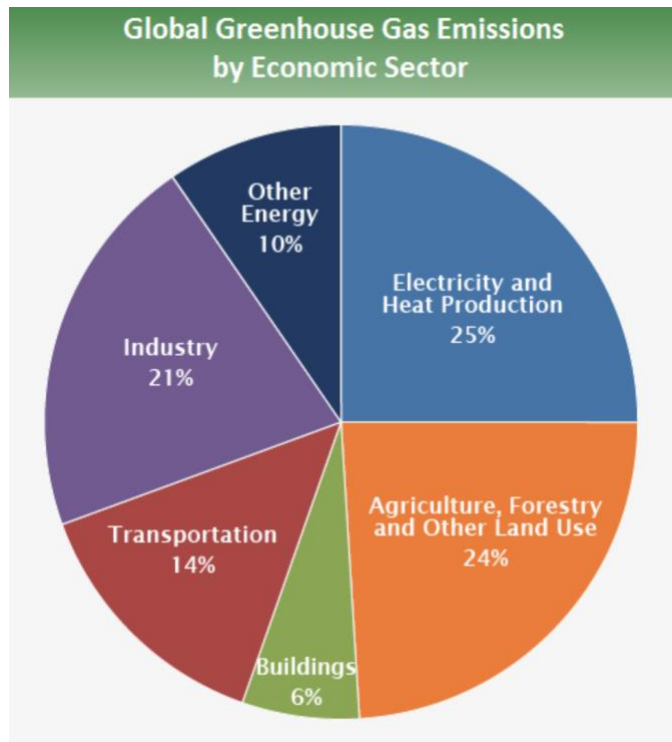
- eggs require 3,200 liters of water per kilogram,
- chicken meat 4,300 liters of water per kilogram,
- pig meat 5,900 liters of water per kilogram,
- sheep/goat meat over 8,700 liters per kilogram,
- and bovine meat a whopping 15,000 liters of water per kilogram.

Now, one might argue that meat and other farmed animal products are more calorie-rich than grains and vegetables, and that therefore this water usage point is moot, yet this is only half true. It is true that meat and other animal products contain more calories per gram of food, yet when you dig deeper into the data the results still show that meat is, in a word, incredibly thirsty. Using the same data from the [Water Footprint Network](#) (which does not differentiate between different types of cereals, vegetables, and fruits but rather averages them out):

- cereals consume 0.51 liters of water per kilocalorie,
- vegetables 1.34 liters of water per kilocalorie, and fruits 2.09 liters of water per kilocalorie.
- Meanwhile, pig meat consumes 2.15 liters of water per kilocalorie,
- eggs 2.29 liters of water per kilocalorie,
- chicken meat 3 liters of water per kilocalorie,
- sheep/goat meat 4.25 liters of water per kilocalorie,
- and bovine meat a full 10.19 liters of water per kilocalorie. That is to say, a kilocalorie of beef consumes fully *twenty times* the amount of water required to produce a kilocalorie from cereals.

Next, let us consider the environmental cost of factory farming. In 2015, according to the Environmental Protection Agency (EPA), the U.S. produced some 6,587 million metric tons of greenhouse gases. Now most people probably assume that transportation - cars, planes, trains, etc. - produce the most greenhouse gases of any economic sector, but this is not the case. In 2014, again according to the EPA, 14% was caused by transportation, while fully 24%

was caused by "agriculture, forestry, and other land use;" only electricity and heat production produced more at 25%. Yet when you dig into the numbers a



little bit, the result is even more troubling., While factory farming produces merely around 9% of carbon dioxide produced by the United States, it produces fully 37% of its methane, a greenhouse gas that is by some estimates has more than twenty times as strong a greenhouse effect as carbon dioxide. This mostly comes from the manure of animals kept in filthy, confined quarters where an enormous amount of feces is

produced and left to accumulate. At a time when we are imposing minimum performance requirements and fuel consumption rates for cars with extremely exacting standards, you would think we would not be so careless with the amount of methane produced to eat a cheeseburger.

Perhaps the most shocking statistic is on antibiotic use. This miracle of modern medical science is, as we are becoming more and more aware, incredibly vulnerable to mutation by bacteria. Every few months it seems we hear of a new antibiotic-resistant strain of a deadly disease, with the Center for Disease Control and Prevention (CDC) estimating that approximately 23,000 people die in the United States every year due to antibiotic resistant infections. This problem is often blamed on over-prescription or over-reliance on antibiotics given to humans, thus increasing the chances that a mutation of a disease resistant to this treatment could emerge. Yet this is only a small part of a much larger mural of terrible public policy. According to the Food and Drug Administration (FDA - using data from two different publications studying

antibiotic use in humans and farmed animals separately), more than 80% of antibiotics used in the United States are consumed by farmed animals, mostly by injecting it into their feed. The National Institute of Health (NIH) states that a combination of exposure to farmed animals fed antibiotics, eating of meat contaminated with antibiotic resistant bacteria, and antibiotic-resistant bacteria in manure being used as fertilizer may pose, "a risk to human health," and late Congresswoman (and microbiologist) Louise Slaughter stated in 2011 that, "what we are witnessing is a looming public health crisis that is moving from farms to grocery stores to dinner tables around the country. Unless we act now, we will unwittingly be permitting animals to serve as incubators for resistant bacteria." The reason for this massive overuse of antibiotics in farmed animals is that these animals are kept in horrendously filthy and overcrowded conditions, and so without preemptive treatment with antibiotics, disease would spread rapidly throughout the populations in a given factory farm and kill large numbers of animals prematurely, thus negatively impacting the profit margins of the factory farm.

Our culture has seen an increasing interest in creating a more humane, more environmentally friendly, and more sustainable world. How can we justify this system which is so clearly inhumane, so clearly a disaster for the environment, and so clearly unsustainable? We haven't even touched on issues such as soil pollution, deforestation, and water contamination, and it is clear from the evidence we have discussed so far that our economy and our culture are being dragged down by a system of food production that is so egregious in its destruction of lives and its pollution of the earth that it can no longer be maintained.

In the next post, we will turn our attention to perhaps the greatest misconception of all when it comes to factory farming and the consumption of the products it produces: the question of human health.