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Term Project Summary- Anthropogenic Climate Change

My Term Project is an illustration that focuses on the meat industry's contribution to climate change and the ways in which it is affecting people and ecosystems.The meat industry contributes to the creation of more greenhouse gases in the U.S than the entire transportation industry, including cars, trains, planes, and trucks. This is due to the fact that methane gas, produced in large quantities by farm animals, is roughly 30 times more damaging than carbon as a heat-trapping gas. (Koneswaran, pg 578). Methane gas produced by enteric fermentation is estimated to be around 90 million tons per year (Houghton, 43). The various activities of the meat industry also have a major contribution to water pollution and deforestation in the U.S. and abroad (Ranganathan). I am aware of the fact that this particular solution to reducing our environmental impact can be fairly controversial. Addressing issues of climate change can be a sensitive subject because many solutions include implementing 'lifestyle' changes. These would be changes in daily life such as driving a more fuel efficient car, driving less, flying less, and of course, eating less meat. Changes in diet are probably the most touchy issues, as diet is tied very closely to cultural history and values. What we eat is generally viewed as a very personal issue, when it should begin to be seen as a more public matter, considering how it effects our shared environment.

I have illustrated a map to communicate the impact of the meat industry on our environment. It is a large scale drawing, depicting factory farms, feed crops, leveled forest, hazardous waste leaking into nearby bodies of water, and so on. All of these things are directly or indirectly caused by the production and consumption of animal products. The purpose of this map is to show how seemingly inconsequential human actions result in the production of greenhouse gases and freshwater pollution. These actions would include things such as buying meat in a supermarket or going through a fast food drive through, which therefore creates a demand for the product that is being produced with damaging methods. All of these small elements are interconnected with little arrows and images like rivers and streets to connect certain ideas. The ways in which they are connected varies depending on what meaning I am trying to convey. For example, a little stream from the factory farm building to the ocean will be carrying toxic waste. A little truck driving from a lake to the feed crops will be carrying fresh water, slowly emptying the lake. Size is also a component that shows the relationship between different aspects of the map. The size of the methane gas is larger than the carbon dioxide gas because of the fact that methane has a much stronger impact on global warming compared to carbon dioxide. The collective size of the different modes of transportation is also small in comparison to methane gas.

I have tried to depict this in a less scientific, diagrammatic way, and in a more stylized, aesthetically pleasing way. Information is always better received when accompanied by or represented by interesting, eye-catching visuals. This is an important aspect of my project because I have met many people, including family, classmates, and friends, who are uninterested in environmental issues and would need something more to catch their interest. My interpretation of what is “aesthetically pleasing” might be biased, but I think bright, saturated colors are generally interesting and eye-catching. I have expressed most ideas visually, however, I think the use of numbers and statistics is important. I have incorporated the text in an illustrated way, in which the words themselves are hand drawn in the same style as the drawings. This is intended to bring the words and images into the same world and help them work seamlessly together. Many of the statistics I have found are staggering and almost unbelievable, and I believe they really give power to my argument. My approach is more rational, as opposed to emotional, because I see very few arguments against meat eating that take this approach. Not unlike advertising, I want the message to be a fast read, easily understood, and informative.

The intended audience could potentially be anyone, but it is most focused towards people who eat meat. It will hopefully be more well received than an outright plea to eat less meat. I don’t want to necessarily choose a certain age group for my intended audience because I think there are people all over the world and of different ages who are misinformed. The intention of my work is to reach and inform anyone that may have no concern for the environment or may be concerned but misinformed. Many people who care deeply about their ecological footprint are simply unaware that what they eat has such an impact. Good willed people all over the world are riding their bikes to work, buying eco-friendly paper towels and watering their plants with bathwater in an attempt to reduce their own personal eco-footprint. Trying to take shorter showers or brushing teeth without the sink water running are minuscule attempts at reducing our water usage when we realize that the real problem is the production of meat and dairy products. Because the connection between eating meat and the environment is farther removed and less visible than the impact of leaving a sink running, I want to show these connections being made in my illustration.

The consumption of animal products in itself is not necessarily the issue that I want to argue against, but rather the over-consumption of animal products. The average consumption of meat and dairy in the world today is extremely excessive. A worldwide study conducted in 2009 shows that the average person consumes about 68 grams of protein each day, which is one third higher than the average adult requirement. (Ranganathan). One reason for this may likely be that many people are unaware of the fact that non-animal based protein sources exist. A very common question that I get asked after someone learns that I do not eat meat is, “How do you get any protein if you don’t eat meat?” Because many people are unknowingly eating many different types of plant based protein, they consume large amounts of animal protein to reach what they believe to be their required daily intake. However, completely eliminating meat and dairy from our diets is not exactly necessary to make change. If every American reduced their

intake of all animal products by half, between 310 and 640 million hectares of agricultural land being used for animal agriculture would be spared. I think that the spread of information such as this is critical to helping the Earth survive our industrialized inhabitance.

Annotated Bibliography

1. Baroni, L., L. Cenci, M. Tettamanti, and M. Berati. "Evaluating the Environmental Impact of Various Dietary Patterns Combined with Different Food Production Systems." *Nature News*. Nature Publishing Group, 11 Oct. 2006. Web. 19 Feb. 2017.

This article compares the range of environmental impacts that are the result of various diets and their methods of production. The study examines omnivorous, vegetarian, and vegan diets, and conventional and organic agriculture's effect on the environment.

2. Bellard, Céline, Cleo Bertelsmeier, Paul Leadley, Wilfried Thuiller, and Franck Courchamp. "Impacts of Climate Change on the Future of Biodiversity." *Wiley Online Library - Ecology Letters*. John Wiley & Sons, Ltd, 18 Jan. 2012. Web. 19 Feb. 2017.

This article explores the effects of climate change on biodiversity at all levels, including the individual, species, ecosystem, and biome. It predicts that climate change could be the most severe threat to biodiversity in the next few decades, with the worst case scenario leading us into the sixth mass extinction.

3. Bullock, Jane A, George D. Haddow, Kim Haddow, and Damon P. Coppola. Living with Climate Change: How Communities Are Surviving and Thriving in a Changing Climate. , 2016. Print.

This book documents the ways in which people are adapting to anthropogenic climate change, obstacles that prevent governments from taking action on climate change related issues, and how city planning and urban development has adapted to accommodate sea level rise, wildfires, drought, and heat waves.

4. Maes, Frank. Biodiversity And Climate Change : Linkages At International, National And Local Levels. Northampton, MA: Edward Elgar Publishing, 2013. eBook Collection (EBSCOhost). Web. 19 Feb. 2017.

This book explores climate change as it is related to human rights, conservation and protected wildlife areas, and how specific places such as Ethiopia and the Amazon rainforest are effected. It also examines the links between ecology and legislation, and how environmental concerns have shaped public policy.

5. Houghton, J T. Global Warming: The Complete Briefing. Cambridge, UK: Cambridge University, 2004. Print.

This book examines the ways in which individuals, governments, and societies can act to mitigate the effects of climate change. It also provides a comprehensive, general

overview of the scientific basis of global warming and its causes (which unsurprisingly excludes animal agriculture and the meat industry).

6. Koneswaran, Gowri. Global Farm Animal Production and Global Warming: Impacting and Mitigating Climate Change. Environmental health perspectives 116.5 01 May 2008: 578. U.S. Dept. of Health, Education, and Welfare, Public Health Service, National Institutes of Health,. 19 Feb 2017.

This article is about the role of farm animal production in global warming. It examines the factors of water usage, fertilizer and feed production, waste disposal, methane production, and the energy spent in transportation of animal feed and the finished animal products. Existing data is used to conclude that the meat industry accounts for more greenhouse gas emissions than the entire transportation sector of the United States.

7. Parmesan, Camille. "Ecological and Evolutionary Responses to Recent Climate Change." *Annual Review of Ecology, Evolution, and Systematics*. N.p., 24 Aug. 2006. Web. 19 Feb. 2017.

This article examines the changes that are occurring as ecosystems, specific species, and individual organisms begin to feel the effects of climate change. It gives examples of species that are more vulnerable to extinction, such as those that are range restricted, like polar and mountaintop species. The article also goes into how interacting species are effected when they each respond differently to global warming.

8. Wike, Richard. "What the world thinks about climate change in 7 charts." Pew Research Center. N.p., 18 Apr. 2016. Web. 26 Mar. 2017

This article examines a critical part of my project, which is the public concern with climate change. The charts and graphs in this article show many misconceptions about climate change that are common, which parts of the world are most concerned with global warming, and what the most popular solutions are. There is also information about what specific consequences of climate change most concern people around the world.

9.Ranganathan, Janet, and Richard Waite. "Sustainable Diets: What You Need to Know in 12 Charts." Sustainable Diets: What You Need to Know in 12 Charts | World Resources Institute. N.p., n.d. Web. 31 Mar. 2017.

The research presented in this article is specifically about common dietary trends and how they affect the environment. This is extremely relevant to my project, mainly because it goes into depth about the animal agriculture industry and even the different environmental impacts of raising different animals for food. For example, the article shows how the water and land usage required to raise chickens for food is much less than what is required to raise cattle. Many worldwide studies are included, which is very useful considering that most of my sources only use studies conducted in the United States.


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