

~ Industrial Animal Agriculture and Climate Change: A Story Source Sheet ~

This string of data tells a concise and compelling story of the connection between industrial animal agriculture and climate change. It is excerpted from We Are the Weather: Saving the Planet Begins at Breakfast, by Jonathan Safran Foer, from the "How to Prevent the Greatest Dying" chapter. Refer to the book's notes and bibliography for original sources. Compiled by Hazon.

For the Earth, as with body temperature, a few degrees can be the difference between health and a crisis.

Taking into account natural mechanisms that influence climate, human activity is responsible for 100 percent of the global warming that has occurred since the beginning of the Industrial Revolution, around 1750.

Our planet is a farm. Globally, humans use 59 percent of all the land capable of growing crops to grow food for livestock.

Our farming is radical. The factory farm was an invention of the 1960s. Before then, food animals were raised outdoors in sustainable concentrations. In 2018, more than 99 percent of the animals eaten in America were raised on factory farms.

Our population growth and our eating is radical. The current level of meat and dairy consumption is the equivalent of every person alive on the planet in 1700 eating 950 pounds of meat and drinking 1,200 gallons of milk every day.

Our climate change is radical. Nine of the ten warmest years on record have occurred since 2005. Humans are now adding greenhouse gases to the atmosphere ten times faster than the volcanoes did during the Great Dying (a lethal mass extinction that occurred 250 million years ago when volcanic eruptions released enough CO₂ to warm the oceans by about 10 degrees celsius).

Greenhouse gases matter. For the eight hundred thousand years before the Industrial Revolution, concentrations of greenhouse gases in our atmosphere remained stable. Since the Industrial Revolution, the concentration of CO₂ in the atmosphere has increased by about 40 percent.

Methane and nitrous oxide are the second and third most prevalent greenhouse gases in the atmosphere. Animal agriculture is responsible for 37 percent of anthropogenic methane emissions and 65 percent of anthropogenic nitrous oxide emissions.

Between the advent of factory farming in the 1960s and 1999, concentrations of nitrous oxide grew about two times faster, and concentrations of methane grew six times faster, than they had over any previous forty-year period during the last two thousand years.

Because climate change is a ticking time bomb, not all greenhouse gases matter equally. Methane has 34 times the global warming potential (GWP)--the ability to trap heat--as CO₂ does over a century. Over two decades, methane is 86 times as powerful. Nitrous oxide has 310 times the GWP of CO₂.

We can think of our atmosphere as a budget and our emissions as expenses: because methane and nitrous oxide are significantly larger greenhouse expenses than CO₂ in the short term, they are the most urgent to cut. Because they are primarily created by our food choices, they are also easier to cut.

As they digest food, cattle, goats, and sheep produce a significant amount of methane, which is mostly belched but also exhaled, farted, and passed in the waste of the animal. Livestock is the leading source of methane emissions. Nitrous oxide is emitted by livestock urine, manure, and the fertilizers used for growing feed crops. Livestock is the leading source of nitrous oxide emissions.

Deforestation matters. Trees are “carbon sinks,” which means they absorb CO₂. Imagine a bathtub filling with water. If the drain slows, the tub will fill more quickly. This is similar to earth’s photosynthetic capacity: already, humans are pumping greenhouse gases into the atmosphere at a rate that exceeds Earth’s ability to regulate them, but vegetation currently stores substantial amounts of CO₂--about one quarter of anthropogenic emissions. The more forests we destroy, the closer we come to plugging the drain.

The cutting and burning of forests is responsible for at least 15 percent of global GHGs per year. According to *Scientific American*, “By most accounts, deforestation in tropical rainforests adds more carbon dioxide to the atmosphere than the sum total of cars and trucks on the world’s roads.”

About 80 percent of deforestation occurs to clear land for crops for livestock and grazing. Burning forests is like further opening the tap while clogging the drain.

It will be impossible to defuse the ticking time bomb of climate change without reducing our consumption of animal products. We do not know for sure if animal agriculture is a leading cause of climate change or *the* leading cause of climate change. We know for sure that we cannot address climate change without addressing animal agriculture.

Changing how we eat will not be enough, on its own, to save the planet, but we cannot save the planet without changing how we eat.

Not all actions are equal. The four highest impact things an individual can do to tackle climate change are eat a plant-based diet, avoid air travel, live car-free, and have fewer children. Of those four actions, only plant-based eating immediately addresses methane and nitrous oxide, the most urgently important greenhouse gases. Everyone will eat a meal relatively soon and can immediately participate in the reversal of climate change.

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