

# Industrialization of the food industry and the environment

Business



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The typical American finds themselves absorbed in the aisles of their local supermarket searching for the lowest deals and newest foods.

Today, many people fill their shopping carts while turning a blind eye to where their food comes from and how it's affecting the environment. To adapt to a booming population, mega food companies have consolidated into a few substantial organizations that control the industry by large scale mass production that stresses the environment. The rapid and rampant industrialization of these international food companies has been detrimental to the environment specifically relating to the depletion of soil by erosion, water pollution, and the overproduction of greenhouse gases leading to climate change. This increased modern industrialization of food companies seen today has severely damaged the environment and its natural wildlife at an exponential rate, with past systems of farming better sustaining the environment. In a healthy and sustainable farming system, one which was used often in the past before the age of industrialization, crops are planted and harvested on a specific schedule in order to take from the environment, but also in return give back. In systems used most often in the past, and used rarely today, different types of crops would rotate throughout individual fields or plots to return various nutrients produced by the crops back into the soil.

Along with plants, livestock on farms would feed on the grass that grows on the land, and livestock waste would be used in fertilizing soil with rich nutrients. This cyclic sustainable system is not used in the majority of food producing companies, since today, companies have disregarded this balance needed for a healthy environment in favor of unhealthy production methods <https://assignbuster.com/industrialization-of-the-food-industry-the-environment/>

(GRACE). Through the recent increased industrialization of the food industry, soil depletion has been shown in the form of erosion occurring at a rapid rate. To keep up with a growing population, major industrialized food companies have not rotated their crops while cultivating produce, thus leaving the cropland used for one crop only continuously depleted of nutrients once growing season is over. To alleviate this destructive cycle, food companies spray harsh chemical fertilizers onto the soil in order to restore it temporarily, leading to these chemicals becoming overused and eventually ineffective overtime as the chemicals wear away the soil particles.

Ecotrust, an environmental conservation organization based in Portland, Oregon reports that in the United States, soil is being lost by erosion on these plantations 17 times faster than it regenerates. Though soil erosion, being the detachment and transportation of soil particles, is a natural process that has occurred on the Earth for millions of years. Today erosion has been amplified through industrialized food companies using tillage and cropping practices on the soil used. Soil erosion is highest in industrialized crop fields, since intensive tilling is used, thus growing plants are not protected by a ground cover that would aid in the lessening of the destruction of root systems and soil surface. By using chemical fertilizers over and over again to replenish what little healthy soil is left after a harsh crop season, soil and cropland is eventually lost and cannot be reused for food production, leading to it being useless for food companies.

This is a process called desertification, which is when arid soil becomes barren and cannot produce agricultural growth for years. In a study by the National Sustainable Agriculture Information Service in 2006, the loss of soil from desertification on US cropland decreases productivity by about \$37.6 billion per year. With highly industrialized croplands eventually ending up being unusable once magnitudes of temporary chemical fertilizers are sprayed on each year, these food companies end up having to search for more land to grow food just to end up destroying its soil. Along with food businesses and their industrialized plantations leading to soil erosion and eventually ruining soil quality, soil erosion has led to pollution in water. Water systems have been negatively impacted by the rampant industrialization of the food industry, whether that be by sediment buildup in local rivers, to increased amounts of sea life deaths because of chemical runoff from plantations.

Runoff from chemical fertilizers in soil are eventually spread into rivers and lakes causing overgrowth of certain sea plants, the loss of natural underwater life, and overall water contamination. A study made in 2000 by the Environmental Protection Agency (EPA), regarding the National Water Quality Inventory, found that recent industrialized agricultural activity in the form of crop lands has been a major source of water pollution, making up 48 percent of pollution on streams and rivers, and 41 percent of pollution in lakes. The predominant source of this water contamination is from the storage and disposal of mass amounts of livestock waste by meat companies in the food industry. Many industrial livestock companies use " lagoons", which essentially are gigantic tanks of stored animal waste. These lagoons

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often rupture or overflow and spill into clean water supplies during storms. Research made by North Carolina State University in 1995 estimated that as many as 55% of the manure lagoons on hog farms in that North Carolina were leaking.

In 1999 in North Carolina, Hurricane Floyd left widespread water contamination after animal waste overflowed into water systems, which in most states is not required legally to be treated. Most of the waste in these lagoons, if not leaked already, ends up being reused onto farm fields as fertilizer along with chemical ones. Accidental disposal of waste from oversaturated “ lagoons” into water systems has detrimental effects on human life, as well as underwater ecosystems. In upstate New York in 2005, manure spilled from one ruptured tank on a 3, 000 head dairy farm. This spillage, consisting of three million gallons of waste poured directly into the Black River, led to an estimated 200, 000 to 250, 000 fish deaths. The deaths of these fish negatively affected the underwater community of the Black River.

Animals who fed on the fish and animals that the fish fed on experienced drastic population shifts and changes, which led to an unbalance and potential endangerment of fish species. Not only does waste spillage immediately lead to fish deaths, sea life can die from plants formed overtime by excessive nutrients and pollutants from this animal waste. Excess nutrients and nitrogen cause “ algal bloom”, which is harmful growth that ends up causing sea life deaths because of a shift in the normal underwater environment. Eutrophication, also known as excessive plant growth, can

make water supply hypoxic, or having too little oxygen. In the Mississippi River Basin, where nitrogen fertilizer is used on large industrialized crop fields, about 15 percent of these fertilizers used on plantations make their way to the Gulf of Mexico according to a report made by the USDA.

This chemical pollution, though being only a miniscule 15 percent of its original sprayed amount has led to “ Dead Zone” in the Gulf of Mexico. This is an area affected by the industrialization of the food industry, which spans approximately 8, 000 square miles in which no fish or other wildlife can survive because of the use of chemical fertilizers. Water pollution caused by the industrialization of food industries has led to the decline of animal populations by spilled animal waste, deadly plant overgrowth, and chemical leakage pollution. This excess waste comes from animals bred for human consumption such as cows, pigs, and chickens, which not only negatively affect the quality of water systems. Domestic animals bred by food companies have led to environmental depletion in the form of rapid climate change by the gases they excrete through waste. In Livestock and Climate Change, an article published by the Worldwatch Institute and written by Robert Goodland, a former lead environmental adviser to the World Bank, and Jeff Anhang, a current adviser, found that the meat industry is responsible for a staggering 51% of global greenhouse gas emissions by producing 32 billions tons of carbon dioxide.

These gases emitted by livestock, including excess carbon dioxide, methane, ammonia, and other pollutants trap the sun’s heat in the atmosphere causing warmth on Earth. The excess warmth produced by these gases

causes changes in Earth's landscape in what is called the "Greenhouse Effect". Besides carbon dioxide, cows emit 37 percent of the world's methane, with this methane being 33 times more potent than carbon dioxide (NASA). The Environmental Protection Agency estimates that methane emissions from animal waste increased by 26 percent in the United States between 1990 and 2004, due to larger, more concentrated dairy cow and swine facilities throughout the country. In North Carolina, the pig industry produces about 300 tons of ammonia per day (GRACE). Nitric oxide and ammonia also have led to the increased climate change, shown in a study published by the National Academy of Sciences, these greenhouse gases in the atmosphere have led to a system called "nitrogen cascade", in which each ammonia molecule "can, in sequence, impact atmospheric visibility, soil acidity, forest productivity, terrestrial ecosystem biodiversity, stream acidity, and coastal productivity".

Factory livestock can produce over 400 different types of gases, such as ammonia, methane, carbon dioxide, and hydrogen sulfide, due to the mass amount of manure they produce and decompose. Through these greenhouse gases produced by domesticated animals, the meat industry has directly led to six percent of the United States contribution to global warming in 2004 according to the Environmental Protection Agency. Today, the rapid and rampant industrialization of the food industry has caused and led to the destruction of the environment through an increase in climate changing gases caused by livestock, animal waste tampering water supply and eliminating populations of sea life, and soil erosion leading to the inability to use land. Mega food companies who control the market by producing the

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most amount of food possible with little remorse for destroyed land and wildlife caused by industrialization need to be regulated. The United States government and the UN need to universally acknowledge climate change, and put laws in place against these companies that continuously exhaust the environment. For instance, some states in the United States are not required to regulate their water systems, meaning that if a certain city's water is contaminated by the spillage of waste into their water supply, the US government does not have to clean it.

Instead of using grandiose crop lands to produce mass amounts of crops, the method of rotating crops would be favorable for the sustainability of the environment, though there are drawbacks to the method. Since the exponential increase in human population that has occurred in recent times, there has been a continuous demand for food, so many local farmers who use the crop rotation method have been alienated from the market in favor of cheap products found in large quantities produced by wealthy big businesses. Ordinary people can reduce the effect that these food producing companies have on the environment by buying USDA regulated organic meats at the grocery store, planting mini gardens to grow food, buying from local growers who rotate crops, and forming a personal compost bucket. As mega food companies continue to damage the environment, it is the right of the consumer to attempt to reverse this damage by stopping the rampant industrialization of the food industry.