

Pollution from Industrial Agriculture: A Global Emergency

Key Points

- Agriculture is a leading cause of pollution in many countries, particularly industrial animal agriculture (also called factory farming) and crop monocultures (for example, crops and soy grown as animal feed).
- Aquaculture production is rapidly expanding around the world at the expense of natural environment. This is also a significant source of both marine and freshwater pollution.
- Despite increasing recognition of the critical nature of these problems, relatively few global and national policies address the environmental effects of animal agriculture, including both livestock and fish farming, and those that do are grossly inadequate.
- It is time for agricultural corporations to be held responsible for their environmental impacts. Tough regulatory systems are needed to prevent such impacts, underpinned by the precautionary principle. These should include action to apply disincentives/penalties for any pollution and greenhouse gas impacts which are not prohibited.
- Any remaining subsidies for industrial agriculture must be stopped. Traditional farming and agro-ecological methods which are kinder on the environment and natural resources should be promoted and incentivised.
- It is essential that firm measures are taken to cut down on food waste—with one third of global food production lost or wasted annually. This adds substantial pollution to our environment, just for food that is being thrown into landfills to pollute our environment even further.
- These problems are fueled by high levels of consumption of meat and dairy products in some regions and rapidly increasing consumption levels in others. These levels of consumption are not sustainable. Food policy and agricultural strategies must be reviewed and strengthened in order to move away from polluting and unsustainable foods, towards healthier and more environmentally-friendly options.
- It is also important to take into account the wider systemic problems underlying this issue. The use of economic growth (measured by GDP) and neoliberal policies have given free rein to agricultural corporations plundering the planet and using valuable natural resources (including water). This needs to be replaced with a new paradigm which prioritizes the wellbeing of humans, nature and animals.ⁱ Also, the UN's Harmony with Nature initiative needs strengthening and more emphasis given to the rights of nature.

Background Information

Introduction

Industrial agriculture is damaging our soil, water, air and the climate on an unprecedented scale. Agriculture is a leading cause of pollution in many countries,ⁱⁱ particularly industrial animal agriculture (also known as factory farming).ⁱⁱⁱ In 2006, the United Nations Food and Agriculture Organisation (FAO) described livestock farming as “...one of the most significant contributors to today's most serious environmental problems.”^{iv} Yet despite the magnitude of the problem, which is fueled by high levels of consumption of meat and dairy products, particularly in the Global North, relatively few global and national policies address the environmental effects of animal agriculture, and those that do are grossly inadequate.^v

Livestock systems occupy about 30 per cent of the planet's ice-free terrestrial surface area.^{vi} According to the Worldwatch Institute, in 2000, there were an estimated 15 billion livestock in the world. By 2016, that number had risen to about 24 billion, with the majority of eggs, chicken meat and pork produced on intensive farms.^{vii} Unless decisive action is taken, this is bound to increase, given a projected increase in world population to 9.7 billion by 2050.

Traditional farming and agroecological methods can be relatively efficient at converting grass and other waste products into useful food,^{viii} and farm waste can be a soil enriching nutrient when applied in the correct amount and with the right method. However, the "fast-growth, high-yield" intensive farming model is far less efficient, using substantial amounts of grain and protein-rich soya as feed. These are grown as monocultures, which deplete the soil and leaves it vulnerable to erosion. Chemical fertilizer runoff and intensive animal agriculture wastes add to global warming emissions and create oxygen-deprived "dead zones" at the mouths of major waterways. Herbicides and insecticides harm wildlife and can pose human health risks as well. Biodiversity in and near monoculture fields is impacted too, as populations of birds and beneficial insects decline.^{ix}

In intensive animal production, animals and their wastes are concentrated and usually exceed the capacity of the land to absorb the waste. Undesirable components of animal waste from farms and slaughterhouses include pathogens (such as *E-coli*), antibiotic-resistant bacteria, hormones, veterinary pharmaceuticals, excess nutrients, viruses, industrial chemicals, and heavy metals which can pollute land and water; and can release ammonia, hydrogen sulfide, volatile organic compounds, bioaerosols, and particulate matter into the air.^x Consequently, the rapid growth of intensive animal production has produced an expanding array of deleterious environmental effects on local and regional water, air, and soil.^{xi}

The creation of such enormous quantities of waste has a devastating effect on the air, water and soil surrounding intensive animal production facilities. Unlike human waste, livestock manure is not processed for sanitation. At these facilities, this waste is commonly mixed with water and held in pits (called "lagoons"), and then spread or sprayed on cropland. However, the system often suffers from an excess of manure, and the lagoons can leak or spill. Alternatively, if the manure is over-applied to fields it can run off into surface waters. Nutrients and heavy metals present in animal feed are also excreted by livestock, and so end up being applied to cropland. These include zinc, copper, chromium, arsenic, cadmium and even lead.^{xii}

The agri-food processing industry is also a significant source of organic pollution in most countries.^{xiii}

Aquaculture production is rapidly expanding around the world, in some places and for certain species, at the expense of the natural environment.^{xiv} Intensive fish production facilities also crowd fish (and their waste) together in nets, cages, or ponds and use large amounts of antibiotics, pesticides and other chemicals to keep disease at bay. The risk of contamination is high, both to the surrounding water and within the enclosures themselves.^{xv} When these facilities are close to the sea, uneaten fish feed, fish waste, chemicals and antibiotics can flow through the cages directly into the ocean, polluting the water and harming the environment. There are also concerns that diseases and parasites—common occurrences in crowded pens—are spread to wild fish.^{xvi}

Greenhouse Gases

Recent research sponsored by NASA and published in the journal *Carbon Balance and Management* indicates that the contribution of global agriculture, including livestock production and the grains required for this sector, is even higher than the 30% figure previously cited by the U.S. Department of Agriculture (USDA).^{xvii}

Marine Pollution

Eighty percent of marine pollution comes from land-based sources, including factory farming wastes.

Environmental Consumption

The planet cannot sustain current developed country levels of consumption of livestock products, as world populations grow and develop. Food policy must refocus our eating habits towards healthier and environmentally aligned products, supported by education/awareness campaigns and taxes on livestock products.

Chemicals

A wide variety of chemical products are used in agriculture (agricultural chemicals), such as pesticides (including insecticides, herbicides and fungicides), as well as synthetic fertilizers, hormones and antibiotics. Animal waste contains residues from the massive doses of non-therapeutic antibiotics and artificial growth hormones that are routinely given to animals to prevent illness and accelerate weight gain. Ultimately, the dangerous compounds found in agrichemicals end up as pollutants when wind and rain disperse them into the environment.^{xviii}

Food Waste

According to the FAO a third of global food production is lost or wasted annually. This adds substantial pollution to our environment, simply for food that is being thrown into landfills to pollute our environment even further.

Structural and Systemic Problems

Pollution is not a natural disaster we have to deal with. It is man-made and a consequence of the current materialistic, consumerist, throw-away lifestyle and lack of effective regulation and enforcement. We can only battle pollution by changing our consumption and production patterns, and establishing effective regulatory systems which prevent and disincentivize pollution, and instead incentivize environmentally-friendly alternatives.

The current neoliberal climate does not hold businesses responsible for the full economic costs of their production. This allows businesses to take full advantage of the “economies of scale” of large monoculture farming without paying a penny for the detrimental environmental impacts this is wreaking. These businesses then go on to make large profits while destroying our land, water, air and biodiversity.

The OECD has carried out studies on the monetary costs of agriculture on water quality. In their report,^{xix} they mention the need to account for external costs. They recognize that as an economic activity agriculture generates a number of marketed goods such as grain, milk and meat. However, the process of agricultural production also generates a number of external effects felt to wider society. Some of these, such as attractive landscapes, are beneficial to society. Others, such as pollution, are costly to society. In either case, failing to account for such non-market goods and services means that the allocation of resources to and within agriculture is sub-optimal from society’s perspective.

Although the detrimental impacts of industrial agriculture are well documented (including by UN agencies), there has been a singular lack of effective action to address this massive problem. There is a lack of:

- Effective regulation and enforcement
- Education/awareness
- Food policy favoring more sustainable and environmentally-friendly diets
- Meaningful disincentives to pollution, and
- Incentives to produce in more environmentally-friendly ways.

Furthermore, we are not only destroying our own countries, we are also exporting this environment-wrecking model to developing countries through development policies, practices and lending, and foreign direct investment—and giving profits for this to business.

The economic growth paradigm causes countries to produce in quantity for export, as opposed to focusing on food sovereignty. However, local production-consumption models are far more sustainable for the planet and contribute to food security on a local level.

The UN’s own Harmony with Nature initiative promotes Environmental Justice and the Rights of Nature.^{xx} Yet for as long as economic growth remains the predominant development paradigm, nature will continue to be freely despoiled, polluted and pillaged by industry.

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