

Pollution: Industrial Agriculture Examined

Key Points

- Agriculture is a leading cause of pollution in many countries, particularly industrial animal agriculture and monocultures such as crops and soy grown as animal feed.
- Aquaculture production is rapidly expanding around the world at the expense of natural environment. Aquaculture, like intensive animal production, is also a significant source of both marine and freshwater pollution.
- 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.
- Regulation and enforcement is vital to prevent and reduce pollution, including emission limits and financial disincentives for both producers and consumers (more than just “polluter pays” as these must both internalize costs and work towards prevention).
- Traditional farming and agroecological methods which are kinder on the environment and natural resources should be promoted and incentivized.
- With one-third of the global food production lost or wasted annually it is essential that firm measures are taken to cut down on food waste. This contributes substantially to pollution in our environment, just for food that is being thrown into landfills to pollute our environment even further.
- These problems are fuelled 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 no longer sustainable. This needs to be reflected in food policy, education and awareness.

Background

Livestock

Agriculture, particularly industrial animal agriculture, is a leading cause of pollution in many countries. 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”. Yet despite the magnitude of the problem, which is fuelled by high levels of consumption of meat and dairy products, relatively few global and national policies address the environmental effects of animal agriculture and those that do are grossly inadequate.

Livestock systems occupy about 30 per cent of the planet's ice-free terrestrial surface area ([Steinfeld et al. 2006](#)). According to the Worldwatch Institute there were an estimated 15 billion livestock in the world in 2000. By 2016, that had risen to about 24 billion, with the majority of eggs, chicken meat and pork produced on intensive farms. Unless decisive action is taken, this is bound to increase, given a projected increase in world population to 9.7 billion by 2050.

19 Chestnut Square
BOSTON, MA 02130
United States

6 The Stables
LECHLADE, GL7 3FE
United Kingdom

Fabriekersstraat
NL-1211 DJ HILVERSUM
Netherlands

P.O. Box 851
6560 WILDERNESS
South Africa

info@worldanimalnet.org
www.worldanimalnet.org
tel. +1 617-942-1819

Traditional farming and agroecological methods can be relatively efficient at converting grass and other waste products into useful food, 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 production model is far less efficient, using substantial amounts of grain and protein-rich soya as feed. These crops often receive large quantities of pesticides and nitrogen-and-phosphorus-rich fertilizer to boost plant growth, and a large amount of these are not assimilated by the crops resulting in runoff and pollution.

Furthermore, in intensive farm animal production, animals and their wastes are concentrated and in such a way that they 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. Consequently, the rapid growth of factory farms has produced an expanding array of deleterious environmental effects on local and regional water, air, and soil.

Aquaculture

Aquaculture production is rapidly expanding around the world, in some places and for certain species, at the expense of the natural environment ([World Bank 2013](#)). Factory fish farms 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. When fish farms 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 ocean environment.

Marine Pollution

Eighty percent of marine pollution comes from land-based sources, including factory farming wastes. As stated in the NGO MG position paper ([2017](#)), to reduce negative impacts and stem the tide of climate change, nutrient contamination, plastic and microplastic waste and the discharge of toxins, environmental policy must focus on precautionary solutions, effective regulation and taxation of unsustainable practices.

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.

Sustainable Consumption

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

For more information and references, please see WAN's [Pollution: Industrial Agriculture Examined Background Research](#).

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