

# Environmental Impact of Industrial Farm Animal Production



A Report of the Pew  
Commission on Industrial  
Farm Animal Production



# **PCIFAP Staff Summary Environmental Impact of Industrial Farm Animal Production**

The Pew Commission on Industrial Farm Animal Production was established by a grant from The Pew Charitable Trusts to the Johns Hopkins Bloomberg School of Public Health. The two-year charge to the Commission was to study the public health, environmental, animal welfare, and rural community problems created by concentrated animal feeding operations and to recommend solutions.

Like many industries, Industrial Food Animal Production (IFAP) results in a number of environmental impacts that affect populations both near and far. While every industry may contribute to society via production of some necessary or desired good, as our population increases, we have become more and more aware of the finite nature of our world's resources and of the impacts of our various industries upon those resources and our own human health. Industrial farm operations impact all major environmental media, including water, soil, and air. Of most concern are the pollution of ground and surface water resources with nutrients, industrial and agricultural chemicals and microorganisms; the use of fresh water resources; the contamination and degradation of soil; and the release of toxic gases and odorous substances, as well as particulates and bioaerosols containing microorganisms and pathogens. The Commission queried the authors of this report on the magnitude and key determinants of these impacts, and the resulting impacts on both human health and ecosystems.

The major causes of the above noted environmental impacts of IFAP are the enormous amounts of waste that are produced in a very small area in this agricultural model, the inadequate systems we now have to deal with



that waste, and the large energy and resource inputs required for this type of production, including feed production and transport.

The USDA Agricultural Research Services (ARS) estimated the manure output from farm animals in the United States to be nearly 1 million US short tons of dry matter per day in 2001. Eighty-six percent of this was estimated to be produced by animals held in confinement. Different groups have posited both lower and higher estimates, but the fact remains that food animals produce an enormous amount of waste every day, exceeding human sanitary waste production by at least 1 order of magnitude. However, disposal of this waste is far less closely regulated than disposal of human waste. Animal manure and other agricultural waste result in water and air degradation, which in turn impact both the aquatic and the terrestrial ecosystems surrounding these operations.

In addition to the enormous waste production produced by industrial agriculture, this system requires major inputs of both energy and resources. Water use is more significant in these systems because it is often used for cleaning the buildings and in the waste systems. In addition, the industrial model utilizes feed, which is grown in monocultures, often far away from the facility. Enormous quantities of both water and petroleum-based pesticides may be used in the production of this feed, leading not only to the depletion of water resources, but also to soil erosion and pollution with pesticides. Pesticide residues may also remain in the animal feed, leading to the possibility of toxic residues in the food animals themselves. Feed crop monocultures also contribute to loss of biodiversity, as they are planted in place of other plants

and/or animal habitats.

Finally, but growing more urgent every day, industrial agriculture may be a significant contributor to climate change, as the production of greenhouse gases (both from the animals themselves and from the decomposition of their waste) from these facilities is significant.

Taken together, these data suggest that the present industrial model of food animal production is not sustainable for the long term. The overuse and degradation of natural resources may be too great to allow the current form of this production model to continue to be viable. The commission requested that the authors of this report investigate the scope of these environmental factors, to help grasp the breadth of the possible impacts of the IFAP system.

By releasing this technical report, the Commission acknowledges that the author/authors fulfilled the request of the Commission on the topics reviewed. This report does not reflect the position of the Commission on these, or any other, issues. The final report, and the recommendations included in it, represents the consensus position of the Commission.



The PCIFAP is a two-year study funded by The Pew Charitable Trusts through a grant to Johns Hopkins Bloomberg School of Public Health. This report was commissioned to examine the specific aspects of IFAP contained herein. It does not reflect the position of the Commission. The positions and recommendations of the PCIFAP are contained in its final report.

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