GUEST EDITORIAL

Hubbub Over Hogs: A Case Study in the Results of Industrial Agriculture

John Opie

The photograph was appalling. The scene was eastern North Carolina. Stacks of drowned hogs, alabaster white, from flooding by Hurricane Floyd. To many observers, the trapped animals were the last straw in a decade-long battle over CAFOs, Concentrated Animal Farming Operations. Such industrial agriculture was either a logical next step to bring greater efficiency to a strapped farm economy, or the final nail in the coffin of independent farming and a rural lifestyle. The conflict broke out wherever the hog factories, involving tens of thousands of animals, appeared, ranging from the Carolinas to Missouri and Iowa, to Kansas, Oklahoma, and Texas, even to Colorado, Wyoming, and Utah. In the Carolinas, the hurricane also helped breach manure-laden hog waste ponds, which then polluted underground aquifers, local rivers, and severely diminished the fishing industry.

The town of Guymon, population 7803, sits in Texas County in the midpoint of the Oklahoma panhandle. Guymon stood at the heart of the old Dust Bowl region of the 1930s, still America's greatest agricultural disaster. Prosperity since then has been intermittent and farmsteads continue to be abandoned. Yet many struggling farmers—two good years in every five—defiantly valued their independent lifestyle. In the 1990s, the people in and around Guymon found themselves in a donnybrook that severed long-term friendships, split neighborhoods, and divided families. Hog confinement operations began to dot the landscape—long metal sheds containing thousands of hogs, with manure deposited in adjacent "lagoons," and eventually spread liberally on neighboring farm fields. Wheat farmers worried about irreversible pollution of groundwater of the vast Ogallala aquifer, widely used for life-giving field irrigation. The smells were "godawful," even health-threatening, at nearby farmsteads.

In December, 1992, Seaboard Farms, a multinational corporation, began its expansion of Guymon's old Swift packing plant to process over four million hogs a year. It would be supplied by hundreds of hog sheds throughout the Texas-Oklahoma panhandle as well as southwestern Kansas. Local farm entrepreneur Paul Hitch, with his large contract with Seaboard, admitted, "I know we'll go through some growing pains in Guymon. But I'd rather go through growing pains than shrinking pains. We can look at a number of other little towns in the area and there is just not much left."

This was not the old barnyard farming. In 1994 the Wall Street Journal described the rationalization of pork production from being a "messy sideline for family farmers" to "technopork"—a profitable corporate investment that reflected high technology and high finance more than recognizable farming. Mega-hog producers were advised by L. R. Taylor in National Hog Farmer Magazine: "The breeding sow should be thought of, and treated as, a piece of machinery whose function is to pump out baby pigs like a sausage machine." Journalist Mark Obmascik observed that "these plants make pigs like GM makes cars."

The agricultural geography of the High Plains was attractive to hog entrepreneurs because it produced large surpluses of animal feeds, gave easy access to plentiful groundwater, its human population was low, and high moisture evaporation rates made smelly hog production more tolerable. The president of DeKalb Swine Breeders noted that on the Plains manure lagoons can advantageously lose an average of 50 inches a year in evaporation and what is not evaporated can be irrigated onto the big units of cropland typical of the region.

Critics of the hog boom in and around Guymon quickly noted that supporters sidestepped the issues of groundwater depletion and quality. The panhandle country sits over the vast Ogallala aquifer. This groundwater has supplied irrigation for crops since the 1960s. Although a third of the Ogallala was consumed by 1990, rigorous conservation has significantly slowed its decline. Local activist Bonita Hoeme noted: "Collectively, irrigation farmers have invested millions of dollars in sprinklers, tail water return pits, underground pipes, to save water and have come a long way—they thought they were making sustainability more possible—they didn't know it would be given to the hogs." Seaboard admitted that each of their 150 farms can consume about 900,000 gallons of water a day, or 329 million gallons a year. Another new problem was year-round pumping in contrast to the seasonal pumping of irrigation farms that allows aquifer cone depression recovery.

In addition, the same hundred pound hog produces 1.7 times as much waste as one human being. Heavy pollution is threatened from large sewage disposal basins of 10 million gallons—benignly called "lagoons"—necessary to industrial pork production. (Critics called them "cesspools.") All lagoons, whether lined with clay or synthetics, are allowed to seep one-quarter inch per day, which would allow 91-1/4 inches a year. Ogallala groundwater in Oklahoma ranges from 50 to 150 feet below the surface, so the effect would be delayed. But tainted groundwater is lost forever. The industry admits that the technology does not exist that will not leak.

Also at issue was the use of center pivot irrigation systems to capture hog wastes from lagoons, mix the wastes with water and spread them onto neighboring fields. Representing Seaboard, Jason M. Peters argued that swine effluent was not a waste but improves crop production. "This not only reduces the need for additional fertilizer elements but also provides organic matter and improves soil's physical and chemical properties." A regional water consultant, however, argued that in time the nitrates from the lagoons and fields will contaminate the groundwater.

Bonita Hoeme's complaint swelled in a women's rebellion. Carla Smalts of nearby Keyes, president of the citizen's group, Safe Oklahoma Resource Development, learned that Seaboard wanted to drill about 40

https://doi.org/10.1017/S146604660000171X Published online by Cambridge University Press

wells on the neighboring ranch of 3,000 acres. How could this be allowed, she protested in a lawsuit, after she voluntarily quit irrigating 13 years ago and worried about sufficient household water? VaLois Ramon of Goodwell spoke out against the "tremendous amount of waste" that would be created by a mega-hog farm and possible nitrate contamination of the Ogallala. Hooker's Julia Howell reported that "Every water permit granted by the [Oklahoma] Water Resources Board for hog houses allows for total depletion of our water. Even irrigators won't do this. The Panhandle is their home and they hope to be here the rest of their lives."

On the other hand, Ladd Hitch, an old-time cattle rancher, enthusiastically invested in a 27,000 hog operation on a 160-acre site. His son Paul noted, "We have the climate, feedgrains, irrigation and aggressiveness on the part of the people" to attract new business. "I think the whole West will blossom with hog units." Paul Hitch recently formed a pork division that plans about 50 decentralized hog sites in Texas County, including six farrowing sites, eight nurseries, and 36 finishing sites. By late 1997 Hitch Enterprises was one of the largest operations in the region, farrowing 15,000 sows in 28 buildings, producing as many as 300,000 pigs a year. To provide water for these operations, Hitch owns 16 well permits in Texas County. Between 1991 and late 1997, Oklahoma's overall hog population increased from about 200,000 to 1.7 million animals, leading state attorney general Drew Edmondson to conclude, "we're exposed to a potential environmental disaster." A permit request made by Seaboard Farms in December 1997 for a gigantic 259,000 swine farm on 8,000 acres (14 contiguous sections) in the panhandle would raise the state's swine population to well over 2 million animals.

One of the great attractions of hog operations was that more (value-added) dollars could be wrung out of soil, water, and crops. Mike Brandherm, Hitch's pork operations manager, spoke in terms of vertical integration and product life-cycle: "Our plan is to graze cattle . . . next to the [hog] farms. It's really kind of symbiotic. They tie in very close together. We save on fertilizer costs and use very little land for the hog farm. The cattle operation benefits from that." Hog contractor Leroy Phillips reported that he was able to increase cattle grazing from 30 head to 68 head after spreading hog manure four times a year on less than 160 acres. Another hog contractor, Richard Alig, told a reporter that "The bottom line is we make more on pounds of meat than on bushels of wheat."

Smell is not a trivial matter. Local citizens, often multi-generation Plains farmers whose grandparents homesteaded the land, discovered themselves living cheek-by-jowl with tens of thousands of hogs crowded in containment buildings. Wanda and Ivan Smith, for example, who farmed 1625 acres of wheat and corn just east of Guymon, were overwhelmed by the smells from lagoons of Seaboard's three nearby hog barn sites. A reporter from *The Daily Oklahoman* visited them in April 1997 and wrote that "It's overpowering. It's nauseating. It burns your eyes and gets in your clothes." Others complained that the smell was different than cattle, and described it either as like a catbox or more like human waste. Researchers noted that "odor is subjective." An activist responded, "When odor is so intense you can hardly breathe, it's not subjective."

The federal Clean Air Act, enforced by the Environmental Protection Agency, does not apply to disagreeable smells, no matter how strong or pungent, unless they include harmful substances such as hydrogen chloride. Nor does Oklahoma have regulations against odor. Nuisance laws do not apply to farming. Airborne threats include disease-bearing bacteria from aerated slurry and the breathing of poisonous hydrogen sulfide, but it hardly reaches a fifth of a dangerous concentration in the open air. Texas County landowner, Julia Howell, with her husband Bob, whose home is 3/4 of a mile from an operation with 42,000 hogs, said "I don't call them odors. They're toxic fumes."

One corporate operator, Pig Improvement Company, said it tried to be a good neighbor. "We try to [move to] a location that's fairly isolated . . . whether it's a half mile from a neighbor or a quarter mile from a neighbor, we want to minimize the risk of their close proximity as much as possible. It's important to look at the wind direction and the speed for that particular area . . . Once in a while somebody is going to smell us. We hope it's not a smell that lasts forever and forever and forever." Paul Hitch admitted, "Is it pleasant? No." But he added, "This is life in the country."

In April, 1997, in a surprising move, the Oklahoma Board of Agriculture, which always prided itself for promoting agricultural production, instead began to police the burgeoning corporate hog industry by setting distance limits and regulating waste management on hog farms. In July 1997, the Oklahoma Water Resources Board, also historically pro-development, began to require plans for pollution prevention, animal waste management, and engineering of waste lagoons. State legislation includes the addition of monitoring wells and sensors beneath lagoons to detect leakage.

By March 1998, Governor Frank Keating signed a statewide moratorium on future hog farms with more than 5,000 swine. This stopped applications for 720,000 more hogs in the state. The stakes had also changed when in March the federal United States Environmental Protection Agency (USEPA) entered the picture with strategies from the Clean Water Act to address animal feeding operations (AFOs) and concentrated animal feeding operations (CAFOs) as significant threats to clean water. USEPA administrator Carol Browner said this was the first federal attempt to regulate such an industry, and would apply to some 6,000 operations around the country.

In April 1998 the Oklahoma legislature began to explore laws preventing the spread of pig manure closer than 300 feet from a water well. A hog farm lobbyist reminded the public and legislators that farmers have always spread animal manure on their fields and that "nutrient recycling" instead of chemical applications is an important element of sustainable agriculture. Hog crit-

https://doi.org/10.1017/S146604660000171X Published online by Cambridge University Press

ics claimed the distance should be 500 feet in sandy areas because wastes easily permeate sandy soil and can quickly end up in a shallow groundwater supply.

As to odor control, in June, 1998, Oklahoma passed legislation that required setbacks of two miles from neighboring homes for an operation of 10,000 or more hogs, of 1-1/4 mile for 5,000 to 10,000 hogs. Local residents are urging a buffer of two to three miles between a habitable structure and a hog confinement operation because of smells and real air pollution. Of special interest (but not currently addressed) can be the identification of the threat and direction of migrating underground "water pollution plumes," under regulation by the USEPA and the Clean Water Act. Local inhabitants would find the mapping of so-called "odor pollution plumes" important, based on intensity, wind direction, and distance.

While hog production seemed a logical progression from irrigated fields and cattle feedlots, it did create a new agricultural landscape, described by geographers John Fraser Hart and Owen Furuseth as an imploded or collapsed landscape. By the late 1990s, legislation on hog pollution in the plains states of Texas, Oklahoma, Kansas, and Colorado did indeed restructure the region. Instead of following the geometry of sections and counties, the legislation laid out the land in terms of large uninhabitable buffer zones wherever hog confinement operations abound—no houses, schools, churches, businesses, or public parks.

Thus state and federal regulations are effectively creating circular "hog zones" up to four miles around the sheds and lagoons, soon to include manure-laden fields. Legislation in Kansas and Oklahoma also identifies "hog-free zones" (not legal terminology) around population centers and where farmers and ranchers have long lived. Should the creation of every large industrial hog operation also be matched by open non-hog land? Thus hogs and people could coexist as neighbors, although uneasily.

The attitude toward hog production depends upon priorities and whose ox is being gored (pig being stuck). One priority is more economic output (corporate profit) from existing resources, which hog factories certainly do generate, although at the cost of more water consumption and new pollution threats. Is this a new consumption of a classic "free commons"? The outcome introduces a thoroughly industrialized agriculture to be concentrated on relatively small sites. The classic landscape around Guymon (and much of the High Plains) could be divided between uninhabitable no-man's-lands and small bustling Plains cities. But the outcome is not necessarily an agriculture that sustains existing human communities.

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https://doi.org/10.1017/S146604660000171X Published online by Cambridge University Press