



Farmville Future? CAFOs and Contamination

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Part I – Farmville County’s CAFOs

Farmville County in North Carolina was once a community with numerous family farms. For generations, farmers had grown a variety of crops including soybeans, peanuts, and corn. They also had raised animals such as dairy cattle, beef cattle, and hogs. Over the last 30 years, however, family-owned farms had seen more financial losses than gains and several families had made the decision to sell their farms to commercial agriculture businesses.

It is hard to resist the lure of selling your farm property when a big company offers to buy your land for a lucrative price. One-by-one, farmers in the county had sold their family-owned farms to large, commercial, concentrated animal feeding operations called CAFOs. CAFOs are facilities that raise large numbers of farm animals in a confined area for the majority or entirety of the animal’s life. At these facilities, animals are often kept in structures that look like warehouses with animals packed side-by-side. Birds are typically confined in small cages that are stacked like miniature apartments, or in large warehouses where the floor is completely covered with roaming birds, waste, and feathers. CAFOs are now used to raise many species of animals including beef cattle, dairy cattle, chickens, turkeys, sheep, ducks, alligators, fish, goats, and horses, thereby providing low-cost, reliable sources for livestock, meat, milk, and eggs (Hribar 2010).

Since the 1960s the shift from family farms to CAFOs has increased significantly. While the practice of raising animals in concentrated areas is not a new method for farming, the shift from small family farms to large-scale facilities has dramatically changed how food is produced. CAFOs are commonly owned by U.S. or international companies. In an effort to compete, some local farmers have also begun animal mass production. The United States Environmental Protection Agency (USEPA) reports that there are roughly 250,000 animal feeding operations, of which 15,500 meet the stricter criteria for CAFOs (USEPA 2003). In 1982 there were 5,442 large farms with more than 1000 head of livestock; by 1997, there were 8,021 farms, an increase of 47%. The increase in animal units was even more dramatic—15.7 million in 1982 compared to 24.9 million in 1997, a 58% increase (USEPA 2004).

Question

1. What is a CAFO and how is it different from traditional farming?

Four CAFOs are now located in Farmville, one on each of the four corners of the county. The Farmville residents and their properties are sandwiched between one poultry and three swine facilities. McGill Poultry is classified as a medium CAFO housing 80,000 laying hens. Honeyhill Farms and Eastville Swinery are two medium-sized CAFOs with between 5,000–8,500 pigs. The third swine facility, Pattengill Enterprises, is the largest CAFO in the county with over 75,000 swine under 55 pounds.

Recently, Eastville Swinery requested permission to expand their 8,500 head pig facility by 5,000 hogs. As a member of the Farmville County Board of Commissioners, you and the board members must decide if Eastville Swinery should be approved for the expansion. Some of the members of the board are concerned because they have heard about the

controversies surrounding CAFOs. In fact, the issue is so divisive between proponents and opponents that sometimes it is hard to differentiate between biased and unbiased views. If the requested expansion is approved, proponents argue that the CAFO would bring in more revenue for the county through taxes. A larger swine facility would bring more jobs to the community. Several local businesses would benefit from a “trickle-down-effect” by providing more goods and services to the CAFO business, and the meat packaging facility in the neighboring county could also increase production and hire more workers. Opponents to CAFOs argue that any potential economic gains come at too great a cost when measured against the likely increase in environmental contamination.

The chairman of the county board has asked the board members to prepare to vote FOR or AGAINST the Eastville Expansion in one week. Members are asked to read background information about CAFOs and conduct their own research into whether the expansion is best for Farmville. The members are warned that as they review information about CAFOs they need to approach the issue with an unbiased view.

Questions

2. What types of CAFOs are in Farmville? How many animals are housed in each CAFO?
3. Based upon what you currently know about CAFOs, what can you infer are some of the issues for each side of the CAFO controversy? What are some of the viewpoints that proponents and opponents may state for and against CAFOs?

References

- Hribar, C. 2010. *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*. National Association of Local Boards of Health: Bowling Green, Ohio. Available online at http://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf. Last accessed May 23, 2013.
- USEPA. 2003. Producers' Compliance Guide for CAFOs: Revised Clean Water Act Regulations for Concentrated Animal Feeding Operations (CAFOs). EPA 821-R-03-010. Available online at <http://www.epa.gov/rfa/documents/Compliance-CAFOs.pdf>. Last accessed June 12, 2013.
- USEPA. 2004. Risk Management Evaluation for Concentrated Animal Feeding Operations. National Risk Management Research Laboratory. Office of Research and Development. Available online at <http://nepis.epa.gov/Adobe/PDF/901V0100.PDF>. Last accessed May 22, 2013.

Part II – Preparing for the Vote

As a board member, you are provided with several resources to help you get started with your study of CAFOs, including a short summary report prepared by an independent consultant. You also have heard that local farmers are having a town hall meeting tomorrow night to discuss the CAFO expansion. As a new member of the board, you want to be thoroughly prepared for the vote. You plan to research both sides of the CAFO issue and quietly attend the meeting.

You will be provided with a copy of the summary report that you are to read (“Report to the Farmville Board of Commissioners”). Divide into groups and review the resources below. Conduct your own research about CAFOs. Be sure to document where you or your group finds your additional resources.

Resources

The following webpages are hosted by the United States Environmental Protection Agency.

- *Unified National Strategy for Animal Feeding Operations*. U.S. Department of Agriculture and U.S. Environmental Protection Agency. March 9, 1999. <http://www.epa.gov/npdes/pubs/finafost.pdf>.
- Animal Feeding Operations: Frequently Asked Questions. http://cfpub1.epa.gov/npdes/faqs.cfm?program_id=7.
- General Information on Concentrated Animal Feeding Operations. http://cfpub1.epa.gov/npdes/afo/info.cfm?program_id=7.

Questions

1. What did you learn about CAFOs?
2. What are or might be some of the negative concerns with CAFOs?
3. During your review of the reference material, which references are biased and which are unbiased? How can you tell?

Part III – Town Hall Meeting

The lights were on late Tuesday night in Farmville County. The last of the farmers had gathered in the fellowship hall for a meeting. Approximately 20 families anxiously sat shaking their heads with worry because they recently had heard about the Eastville Swine CAFO's plan to expand.

The meeting was called to order by Mr. Edward James, a tall, thin man who had lived in Farmville County all his life. He addressed the crowd.

“Eastville Swinery has requested the Board of Commissioners to review their plan to increase the number of pigs to 13,500 by next year. The notice was published in the newspaper and indicated that the Board of Commissioners is currently reviewing the CAFO request for the expansion and that they will vote next week—”

Mr. James was interrupted before he could continue. “My son can't even go outside to play without getting sick. His asthma is triggered within 15 minutes of walking outside on our farm,” said Mrs. Turebule. Her son was only two years old and had been in and out of the hospital for asthma related illnesses. “Our farm is located eight miles from the poultry CAFO and one mile from the Pattengill CAFO. The manure odor from the Pattengill CAFO lingers in the air, making it hard to breathe. We get headaches all the time and when Pattengill sprays their fields, we don't even bother to go outside. We cannot let any of the CAFOs get bigger!”

Richard Sykes was also at the meeting sitting in the front row. He and his family used well water as their drinking source. For years, ever since the opening of Eastville Swinery, the family had suffered from repeated stomach ailments, including upset stomachs, nausea, and diarrhea. They never knew when they might get ill. His wife now insisted on boiling all the well water and she only let the family drink bottled water. Mr. Sykes and his family lived one farm over from the Eastville Swinery.

A grey-haired woman now spoke up. “We've had to go to the doctor repeatedly since Hank's heart attack. I remember the day so vividly. He was chopping wood and the air was especially strong with the stench that comes from that CAFO!” Mrs. Colt winced in disgust before continuing. “I was reading information about CAFOs polluting the air quality and how it can lead to strain on heart and lung function.”

Mr. James brought the group back to order. “We can't live like this!” he emphasized with frustration. “If you read about these big commercial farms, they are a source of air, groundwater, and surface water contamination. We are now surrounded by CAFOs that are filled with animals producing tons of waste and wastewater. The common practice is to apply manure to the property, but run-off can release contaminants into the air, lakes, river, streams and groundwater. I know I've seen a change since the CAFOs moved in. Remember when our waterways were clean and full of fish? Remember when wildlife such as deer and waterfowl flourished in Farmville? I know all of you have seen the changes too! We have to attend the board meeting next week and express our concerns!”

As a board member, you and a few other members have attended the meeting. You have all sat quietly in the back of the room and listened to the discussion.

Questions

1. What concerns and medical conditions have you heard the residents express?
2. What do they believe is the source of their illnesses?
3. Should you consider their experiences with the CAFO for your vote?
4. Using the facts you have learned from your independent research and the concerns you have heard from the residents, what is your current position concerning the proposed CAFO expansion?

Part IV – A Farmer Fights

Lynn Henning and her husband are farmers who were recently featured in a magazine article. The Hennings began collecting environmental samples after noticing adverse changes in their farming community; they suspected that the CAFOs were the cause of contamination.

Lynn and her family have farmed for over 70 years. It was 1998 when she first really started to notice the changes happening in her farming community. She observed very strong manure odors lingering in the air and the color of the water in her local streams changing. Lynn also had noticed a decrease in the quantity and quality of fish living in their local waterways, and a decrease in the number of wildlife that once lived in the woods. She began to collect water samples from her local waterways. Self-taught, she has learned how to detect fecal contamination in water samples. Lynn is not a scientist, but has learned how to document indicator bacteria levels and has become a community environmental activist.

Lynn's efforts to test samples from her local area have proven to be both difficult and rewarding. Many people in her area consider her to be a trouble maker trying to close the CAFOs, thus hurting their ability to work at the facilities. She and her family have been threatened. Her work, however, has been lauded by the Sierra Club and other activist groups, resulting in a \$100,000 award for her work. To learn more about Lynn Henning, read the article referenced below that tells of her community activism. In the next part of the case, you will find yourself back in Farmville where the discussion at the town hall meeting will focus on the activities of someone very similar to Lynn.

Reference

Dobie, K. 2011. This is not farming. *O, The Oprah Magazine*, November 2011: 169–208. Also available at: <http://www.oprah.com/world/Health-Risks-That-Large-Factory-Farming-Leaves-Behind/#ixzz1mt1GReli>. Last accessed May 23, 2013.

Part V – We Have to Do Something!

Hattie Kohl is a childhood friend to many of the people at the town hall meeting. Many of them have read the article in the local paper about her activism and the samples she has taken.

“Hattie has been collecting water samples and her husband has been flying over the CAFO site taking pictures. I’ve seen some of the photos. The waste is horrific in the pictures. Hattie has been very successful at gathering data and analyzing samples,” explained Mr. James.

“You say Hattie has collected samples? What type of samples has she collected?” asked Mr. Skyes. He had not read the article but he wondered if the collected samples could explain what had been happening to his family with regard to their repeated stomach illnesses.

Mr. James answered his question. “Hattie has water samples where she has detected bacteria. She measures the levels of indicator bacteria, such as *E. coli* and total coliform, which are bacteria found in fecal matter. These indicator bacteria can be signs that there is fecal contamination and that there is potential for the water to contain more harmful pathogens such as *Cryptosporidium* or *Giardia*, which are microorganisms called protists. The EPA only allows for 133 *E. coli* colonies/100 ml for recreational use and our state recommends no physical contact with water having over 1,000 colonies. For drinking, water cannot have any *E. coli* bacteria present in the water. Some of Hattie’s samples have had indicator *E. coli* levels that have exceeded the EPA recommendation for safe recreational use. One of the samples in her test had over 1,000,000 *E. coli* colonies in as little as 1/2 cup of the water or 100 ml,” explained Mr. James.

“Hattie’s farm is about 10 miles from our property,” said Mr. Sykes as he looked at his wife with concern. He stood and again addressed the audience. “Her water samples are proof that the waterways may be impaired. The contamination might be more extensive. Her husband’s aerial photos also show evidence of poor disposal practices. This is information we need to take to the board so they can vote against the Eastville CAFO expansion.”

Mr. James nodded and continued. “Yes, we need to be present at the board meeting to express our concerns about the CAFO expansion. Maybe if we contact Hattie, we can help her research effort by collecting samples from our farms, our wells, and nearby streams. If we have high bacteria levels too, maybe we can take this evidence to the EPA.”

Questions

1. What are some of the types of microorganisms identified in Hattie’s water samples?
2. What are the levels of *E. coli* in water that the EPA consider safe for recreational use? What are the levels for drinking water?
3. What are some of the bacteria levels detected in Hattie’s samples?
4. What is the proposed plan the farmers are considering to help their cause against the CAFO expansion?
5. If you were one of the farmers, would you participate in the board meeting and/or help collect samples?



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