Factory Farms: Environmental and Societal Impacts in Wisconsin and Poland

Summary

The following unit helps students critically examine the issues surrounding factory farms. Students will learn to assess the complications inherent in food production, taking into account the environmental, economic, social, cultural, scientific, and political aspects of factory farming. Students will compare the impact of factory farms on Wisconsin’s environment and rural livelihoods with the recent introduction of factory farms in Poland by Smithfield, an American company. After an in-depth study, students will use their knowledge of factory farms in Wisconsin and Poland to participate in a class simulation about whether a new factory farm should be built. The unit culminates by having the students create a list of international guidelines for factory farms that encourage environmental, social, and economic sustainability.

Goals

- Increase students’ awareness of environmental issues on both local and global scales
- Foster understanding of students’ citizenship in local and global communities
- Increase students’ awareness of world geography and global connections

Wisconsin’s Model Academic Standards Correlations

Environmental Education

- Knowledge of Environmental Processes and Systems (Energy and Ecosystems): B.8.5, B.8.9, B.8.10
- Knowledge of Environmental Processes and Systems (Natural Resources and Environmental Quality): B.8.12, B.8.15, B.8.16, B.8.17, B.8.23
- Environmental Issue Investigation Skills: C.8.1, C.8.3, C.8.4

Grade Level: 6th-8th
Subject Areas: Science and Social Studies
Length of Unit: Up to three weeks
I: General Farms

A. Background Information for Teachers

Global meat and dairy consumption is increasing. According to the UNFAO, population growth, rising incomes, urbanization, changing diets, and the opening up of markets will lead world meat production to double by 2020. Most of this increase is expected to come from factory farms – corporate-owned farms where large numbers of animals are housed and fed in confined facilities. Factory farming is an efficient way to produce a large amount of meat and dairy – making these foods more accessible and affordable to more people around the world. Factory farming can also be a highly profitable industry. However, factory farms may threaten the environment, drive family farms out of business, and endanger human health.

Since factory farms house a large number of animals they must deal with a lot of waste. This waste is kept in large pits, called “lagoons,” until it can be applied to land. These lagoons may leak, releasing bacteria, hormones, and antibiotics into the streams and groundwater. Also, animals that live so close together often become ill, so they are treated with antibiotics. This widespread use of antibiotics helps breed antibiotic-resistant microbes, making medicines less effective for humans and animals. Factory farms have been criticized for negatively impacting local economies by driving family farms out of business.

According to the Wisconsin Stewardship Network (WSN) website, family farms “provide 10% more permanent jobs” and “generate a 37% greater increase in per capita income than factory livestock operations.”

Smithfield Foods, the largest pork processor and hog producer in the United States, suggests that such criticism is unfounded. According to their website, Smithfield utilizes “today’s farming practices to keep our animals healthier, safer and more comfortable, while at the same time helping us preserve and protect our environment and natural resources” and they claim to “promote economic development “ and “contribute to enriching the quality of life in our communities.”

(Sources: Osterberg & Wallinga 2004, World Watch Institute, Sierra Club, Grace Factory Farm Project, Wisconsin Stewardship Network, UNFAO, and Smithfield’s websites)

B. Objectives

Students will:

- List factory farming vocabulary words
- List “players” involved in the issue
- Write a few sentences examining the perspectives of each “player”

C. Activities

1. As a class, brainstorm what the students already know about farms. On a large piece of butcher paper, create a concept map of the ideas generated by the class.

2. On a large piece of butcher paper, create a running list entitled, General Factory Farming, to keep track of new information. Students and the teacher should continually add information to the list. Students should also keep track of new information in notebooks.
3. Have the students read a variety of resources on factory farming. Students should make a list of vocabulary words and their definitions, as well as a list of the “players” involved in the issue and what their perspectives might be on factory farming. Some “players” might include local farmers, community members, environmental groups, meat and dairy industry officials, and government officials.

D. Resources

1. Websites

American Farm Bureau
An independent, non-governmental organization governed by and representing farm and ranch families that aims to improve the financial well-being and quality of life for farmers and ranchers.
http://www.fb.org/

Animal Welfare Institute
A U.S.-based organization that is fighting Smithfield in Poland.
http://www.awionline.org

EcoHealth
Provides background information and lesson plans on a variety of environmental issues for teachers and students

Farm Sanctuary
Has online teacher’s guide and student activities
http://www.farmsanctuary.org/

Farms as Factories
A resource book for high school students and their teachers
http://www.humaneteen.org/farms_as_factories/Farms%20as%20Factories.pdf

Food and Agriculture Organization of the United Nations (UNFAO)
http://www.fao.org/

GRACE (Global Resource Action Center for the Environment) Factory Farm Project
Downloadable guide for teenagers with background information and activities
http://www.factoryfarm.org/

Humane Farming Association
http://www.hfa.org/

Humane Society
http://www.hsus.org/farm_animals/factory_farms/

In Defense of Animals
http://www.idausa.org/facts/factoryfarmfacts.html

National Family Farm Coalition
http://www.nffc.net/
II: Factory Farms - Wisconsin

A. Background Information for Teachers (Wisconsin):

Factory farms are dispersed throughout the state of Wisconsin, and over the past decade, their numbers have increased (Tables 1 & 2). The Wisconsin Department of Natural Resources states that there were 131 Confined Animal Feeding Operations (CAFOs) in Wisconsin in April 2004. CAFOs are defined as operations with 1,000 or more animal units. An animal unit is calculated differently depending on the size and type of animal. For example, one beef cattle or 200 chickens are equal to one animal unit.

The federal Clean Water Act requires CAFOs to prevent discharges of animal waste to rivers and streams. In spite of this law, there have been major incidents of water pollution by factory farms in Wisconsin. For example, in Milwaukee, 400,000 people fell ill with diarrhea, cramps, fever, and vomiting and more than 100 people died as a result of Cryptosporidium-contaminated water in 1993. Manure runoff from dairy feedlots along rivers was implicated in the outbreak.

Meat and dairy production form an important part of Wisconsin’s economy. Wisconsin ranks number one in cheese production in the U.S. and second in milk production. Some argue that factory farms are necessary for Wisconsin to remain competitive in the national and global meat and dairy markets.
B. Objectives

Students will:

- Research and write/present a brief report about a factory farm in their area
- Compare perspectives in two editorials
- Write an editorial about the 1993 Cryptosporidium outbreak in Milwaukee
- List the meat/dairy products they consume, research where they are produced, and create a chart that shows where most meat/dairy is produced
- Create a compelling argument from one perspective based on information from guest speakers, classroom and community activities, and independent research for participation in a class simulation


Table 1

| Wisconsin's WPDES Permitted Concentrated Animal Feeding Operations |

Table 2

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<tr>
<th>CAFOs with WPDES Permits</th>
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C. Activities

1. On a large piece of butcher paper, create a new running list entitled, Factory Farming in Wisconsin, to keep track of Wisconsin-related information. The teacher and students should continually add information to the list. Students should also keep track of new information notebooks. Place class list near General Factory Farming list.

2. Bring in speakers representing different perspectives to introduce students to the topic of factory farming in Wisconsin. Some possibilities include: Wisconsin Farm Bureau, Professional Dairy Producers of Wisconsin, Smithfield, Wisconsin Stewardship Network, Family Farm Defenders, and Midwest Environmental Advocates. Have the students compile a list of questions for each speaker.

3. Have students read editorials on factory farming in Wisconsin that represent different points of view. One possibility is to compare three editorials that appeared in The Capital Times somewhat recently: John Oncken’s piece entitled, “So Many Wrongheaded Views On Dairying,” John Peck’s response “Small-Scale Family Farms Work Best, But They Face Many Threats,” and Margaret Krome’s “State Needs Large Farms, Too.” Have the students compare the arguments made by each person.

4. Have the students interview community members for their opinions of factory farms.

5. Have the students locate and research a factory farm in their area. Students should take notes on the factory farm, write a brief report of their findings, and present them to the class. The WDNR website has lists and maps of all the CAFOs in Wisconsin. The Wisconsin Agricultural Statistics Service has useful information as well.

6. Have the students read archived newspaper articles about the 1993 Cryptosporidium outbreak in Milwaukee. Have each student write an editorial for a national newspaper explaining what happened and what they think could have been done to prevent it. Then have the students research the watershed in their area. Have them predict how a manure spill in their watershed might affect their community and environment. Discuss the effects of manure in the water including eutrophication of lakes and oceans and groundwater pollution. Also discuss what farmers can do to prevent this.

7. Have the students create a list of meat/dairy products from their home, their local supermarket, or their school cafeteria. They should list the brand name and where it comes from, and then research the product on the Internet. Have the students present their findings in small groups. Next, on a large map of the United States, have the students mark where their food comes from. Finally, have them summarize the results in a chart or graph.

8. Based on the information gathered in the previous activities, have students participate in a class simulation about whether a factory farm should be built near the school. Divide the students into small groups each representing the key players in the debate: family farmers, health officials, local politicians, factory farm corporation, environmental groups, and local citizens. Students should do additional research and try to find evidence to support their arguments. Have the students present and discuss “in character” in a town hall meeting style debate. After the simulation, have students step out of character and discuss which arguments they find most compelling.
E. Resources

1. Articles


Liebl, David. 2003. “Siting CAFOs in Wisconsin – Public Perception of Impacts” 
A list of viewpoints of rural Wisconsinites compiled from a series of workshops organized by UW-Cooperative Extension 
http://www.uwex.edu/shwec/LIEBL/sitingCAFOsIn%20wi.pdf

2. Websites

Eat Well Guide
A guide to farmers who use sustainable farming practices and stores and restaurants who sell their meat and dairy 
http://www.eatwellguide.org/

Family Farm Defenders
http://www.supermarketcoop.com/ffd.htm

Midwest Environmental Advocates
A nonprofit environmental law center 
http://www.midwestadvocates.org/

Professional Dairy Producers of Wisconsin 
http://www.pdpw.org/

Wisconsin Agribusiness Foundation 
http://www.wisagri.com/wac_education.htm

Wisconsin Agricultural Statistics Service 

Wisconsin Dairy Business Association 
http://www.widba.com/

Wisconsin Department of Natural Resources 
http://dnr.wi.gov/
Site has lists and maps of all the factory farms in Wisconsin. 

Wisconsin Farm Bureau Federation and Agriculture in the Classroom 
http://www.wfbf.com/
Wisconsin Stewardship Network
Has current and archived news articles about factory farming and other environmental issues in Wisconsin
http://www.wsn.org

3. Newspapers

Milwaukee Journal Sentinel Archives
http://www.jsonline.com/

The Capital Times and Wisconsin State Journal Archives
http://www.madison.com/archives/

III: Factory Farming - Poland

A. Background Information

Polish farmers have a history of thinking and acting independently. In 1793, the Polish peasants overran the Russians during the Kosciuszko uprising. In the 19th century, the Polish peasantry overthrew the practice of serfdom. Under communism, leaders tried to consolidate Polish agriculture into state farms, but Polish farmers resisted these attempts. Poland remained the only Soviet bloc country where individual farmers dominated agriculture. In 1990 communism ended and Poland still had 80% of farmland in private hands and 25% of the population was engaged in farming.

Today, around 2 million Poles or 18% of the country’s population are farmers or members of farming families. The economy is struggling and unemployment and poverty rates are high. However, parts of Poland are more environmentally pristine than other European regions. White storks have become extinct in other nations due to modern agricultural practices. However, Poland still has 50,000 pairs, making up 25% of the world’s population. Poland also has some of the last European bison and Europe’s last clean flowing, unregulated rivers.

In 1999, Smithfield, the world’s largest pork producer, began buying slaughterhouses and state farms in Poland. In the U.S., Smithfield does not have a clean environmental record. In 1995, a spill from one pig lagoon in North Carolina killed a billion fish in the Neuse River. In 1998, Smithfield was fined $12.6 million for 6,900 violations of the U.S. Clean Water Act. Smithfield’s strategy is to control all aspects of pork production: farmer, slaughterhouse, and meat packer. Keeping thousands of pigs in one place has proven cost effective for the company to produce cheap, high quality pork. Smithfield currently slaughters 1.2 million hogs a year in Poland of which 35-40% of this pork is exported.

On July 22, 2003, Smithfield’s vice president promised Poland’s Senate agricultural committee that Smithfield would “modernize” Polish agriculture and bring prosperity and jobs to rural communities. However, studies show that factory farms have a devastating impact on rural economies and quality of life. Staffing on the factory farm is minimal and as few as two workers may tend a factory of 10,000 pigs. Some farmers are benefiting from Smithfield’s involvement in their communities since they pay contract farmers to fatten their pigs before slaughter.

B. Objectives

Students will:

- Research and discuss arguments for and against factory farming in Poland
- Research one aspect of the geography of Poland and do a brief presentation

C. Activities

1. On a large piece of butcher paper, create a new running list entitled, *Factory Farming in Poland*, to keep track of Poland-related information. Students and the teacher should continually add information to the list. Students should also keep track of new information in notebooks. Place list near *General Factory Farming* and *Factory Farming in Poland* list.

2. As a class, brainstorm what the students already know about Poland. Make a list of the ideas generated by the class.

3. On a blank map of Poland, have students label the political and physical features. Students could also use an atlas or social studies textbook to find these features.

4. Divide students into groups and have each group research a topic on Poland’s geography, people, economy, agriculture, fisheries, navigation, and history. Then, have each group do a short presentation with a visual aid while the other students take notes.

5. Have the students read a variety of resources on factory farming in Poland. Have students pay close attention to perspective. For example, they could compare “Understanding Smithfield: Polish Operations” on Smithfield’s website, Kennedy’s “The Invasion of Poland” in *The Ecologist*, and Frankel’s “Polish Farmers Raise a Stink over U.S. Agribusiness Giant” in *The Washington Post*.

6. Using the information collected in their notebooks, have the students create graphic organizers to illustrate the following: the nearby vs. faraway effects of factory farms, the immediate vs. future effects of factory farms, and the linkages between environment, society, and economy. Students could illustrate the information in a simple chart, a word web, or a drawing. Have the students do additional research if necessary. When the students have completed their graphic organizers, lead a discussion on who bears the cost of factory farms, who reaps the benefits, and why.

7. Do an email exchange with a class in Poland to discuss farming issues.

D. Resources

1. Articles/Reports

BBC Report (clicking on the link will download an audio of a recent BBC report on Smithfield Farms in Poland, however I could not locate the date and original source of this report)


http://www.ccb.se/documents/toHELCOM26-GFG28Feb05.doc


2. Websites

Animals’ Angels
This German organization acts for the global improvement of animal welfare by actively witnessing industrial farms and livestock transportation. Information from these excursions is provided as film clips, links, and written reports. http://www.animals-angels.de/

Coalition Clean Baltic
http://www.ccb.se/index.html

Compassion in World Farming (CIWF)
This UK-based organization seeks to eliminate factory farming globally. Their web site includes news articles, information on how to get involved in the international campaign, and educational resources about factory farms. http://www.ciwf.org.uk/

European Food Culture
A European campaign for improvement of food policy. The website contains some documents about factory farming in Europe. http://www.eat-better.org/

Farming Solutions
This website gives examples of successful, environmentally responsible farming systems from all over the world. It illustrates how farmers can protect the environment while at the same time increasing food supply where it is most needed. http://www.farmingsolutions.org/
Friends of the Earth
This UK-based organization leads an international campaign against genetically modified foods. Their website has curriculum units on a variety of environmental issues, including food and farming. http://www.foe.co.uk/

Heifer International
This organization gives livestock and training and related services to small-scale farmers and communities worldwide. http://www.heifer.org/

International Coalition to Protect the Polish Countryside

Smithfield Foods

IV. Closing Activities

A. Objectives

Students will:

- Synthesize cumulative information using a Venn Diagram
- Create and present a list of guidelines for nations to follow for factory farming students
- Decide on solutions for pollution caused by factory farming
- Take action to enact one solution

B. Activities

1. Using a Venn diagram, have the students compare and contrast the issues surrounding factory farms in Wisconsin and Poland.

2. Discuss world trends in meat and dairy consumption. The USDA has useful information on this topic.

3. On a world map trace the path of where U.S. meat and dairy products go.

4. Help students combine what they have learned about factory farms in Wisconsin and Poland by creating a list of guidelines for nations to follow for farming.

   a. Have the students read the relevant parts of the following documents as examples of appeals and declarations about general environmental issues:

b. Using the Children’s Appeal to World Leaders as a guide, have students create their own appeal to world leaders for international farming guidelines. These guidelines should ensure environmental sustainability (Goal 7 of the UN Millennium Development Goals) as well as social and economic sustainability. Have students write these guidelines in rough draft form.

c. For their final draft, have students create colorful posters listing their guidelines.

d. Each group should present to the class imagining that they are presenting to the United Nations.

5. Have the students use the information they have learned in this unit to brainstorm solutions to the factory farming issue. Have students come to a consensus for what they see as the best solutions and make a class list. If students oppose factory farming, be sure they can answer the following questions: What are the alternatives? What are the costs of the alternatives? Who bears these costs? Then, have the students brainstorm ways they can take action to enact their solutions. Some ways to take action might include:

- Write letters to their local representatives and/or write letters to the local newspaper – supporting or opposing factory farms, asking to tighten or loosen regulation of factory farms
- Buy organic and/or free-range meat and dairy
- Buy from sustainable food sources in their area, including grocery stores, farms, and restaurants.
- Eat less meat or become vegetarian
- Start a school garden
- Volunteer for or donate money to a group of their choice.

V. Assessment

- Have the students create presentations for other classes or for a school assembly. The students should design a rubric for what would make a good presentation. Then, have them evaluate themselves and each other. The teacher should assess them as well.
- Have the students write a persuasive essay for or against factory farming
- Collect and assess student notebooks

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