



e² transport — Food Miles

The complexities of our food system and its impact on the environment are at the forefront of a national debate. In this episode we will examine how the eating choices of humans affect not only the landscape of the natural world, but also the balance of species on earth and the global climate crisis. According to some estimates, agriculture is a 15 – 25% contributor to climate change. Michael Pollan, the author of *In Defense of Food* and *The Omnivore's Dilemma*, explains how the shift from solar-based agriculture before World War II to fossil fuel-based agriculture after World War II, affected the efficiency of both food production and fossil fuel usage. In recent years, as more information about fossil fuel usage in agriculture has been publicized, some have started a movement to eat food that has a smaller environmental impact.

Today it takes twenty calories of fossil fuel energy to produce two calories of food energy, whereas 100 years ago, only one calorie of fossil fuel energy was required to produce the same amount of food energy. The shift came after World War II with the discovery of synthetic fertilizer, which is usually made from natural gas but was originally converted from munitions and petroleum-based pesticides, which were first created from nerve gases. While in some ways this new fossil fuel-based agriculture system is incredibly efficient (one American farmer can feed 126 people for a year), it is incredibly inefficient in terms of the quantities of fossil fuels that are used in the production of that food. Because most transportation worldwide is fossil fuel-based, the distance that food travels before it reaches your plate, an average of 1,500 miles, also contributes to its carbon footprint. With rising oil prices and dwindling non-renewable resources, our current system of food production cannot be sustained forever, which has led some to explore alternative sources of food.

Judy Wicks, the owner of the White Dog Cafe in Philadelphia, has been buying from local farmers for over 20 years. She explains her reasons for buying local, which range from serving higher quality, tastier food with a smaller carbon footprint to helping local farmers who have trouble competing with bigger factory farms. Through her foundation, White Dog Community Enterprises, she has tried to cultivate the local economy through small business ownership. One of the foundation's first endeavors, the Fair Food Project, encourages local restaurants to buy from local farmers. We hear from farmers about the challenges they face growing crops and raising cattle in the traditional way, but also the benefits that go along with their choice to reduce their use of fossil fuels in production.

While a major shift in our food production system from fossil fuel-based agriculture to solar-based agriculture, may require a shift in lifestyle and eating habits, there is not consensus about whether that change is a sacrifice or a benefit. Because the current



system is unsustainable, the question now becomes, what is best for the health of the human race and the planet?

To find out more about the Fair Food Project, visit www.whitedogcafe.foundation.com/fairfood.html

To find out more about Green Meadow Farm, visit www.glennbrendle.com

To find out more about Michael Pollan, visit www.michaelpollan.com



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PRE-VIEWING QUESTIONS

- 1) Have you ever heard of urban gardening? If so, is it something that you've done or that you would like to do? If not, what do you think it means?
 - 2) Think about a typical dinner that you eat. What foods does it include? Do you know where that food comes from (before it ends up in the supermarket)? Where it is grown? Using what methods? Where it is processed, if it is processed?
 - 3) On average how far do you think a food item travels before it ends up on your plate? Make a prediction in miles. How does the distance that food travels affect its taste? Can some foods travel further than others without their taste being affected? Give specific examples.
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POST-VIEWING QUESTIONS

- 1) What is the main difference between fossil fuel-based agriculture and solar-based agriculture? What are the benefits and drawbacks of each type? You can make a pro and con list if you'd like.
- 2) When did fossil fuel-based agriculture emerge? Why did it emerge at that time? Name two specific reasons.
- 3) What are some of the environmental benefits of buying food from local organic farmers? What are some of the drawbacks?
- 4) In the video, when Michael Pollan describes why our current food system is unsustainable, he states that there are “internal contradictions that will lead to breakdowns.” What does he mean? Can you think of what those internal contradictions might be?
- 5) In the video Ann Karlen from the Fair Food Project talks about what the word fair means to her. List three points that she makes about being fair. What do you think are “fair” practices when it comes to food? Fair to whom or what? The animals, the consumers, the farmers, the environment? Make your own list of what you think are fair and unfair practices.



NATIONAL STANDARDS FROM MCREL STANDARD

Civics

Standard 19.5 - Understands the influence that public opinion has on public policy and the behavior of public officials

Standard 21.1 - Knows a public policy issue at the local, state, or national level well enough to identify the major groups interested in that issue and explain their respective positions

Standard 21.2 - Understands the processes by which public policy concerning a local, state, or national issue is formed and carried out

Engineering Education

Standard 14.4: Understands how societal interests, economics, ergonomics, and environmental considerations influence a solution.

Standard 17.6: Understands tradeoffs among characteristics such as safety, function, cost, ease of operation, quality of post-purchase support, and environmental impact when selecting systems for specific purposes.

Science

Standard 6.2 - Knows how the amount of life an environment can support is limited by the availability of matter and energy and the ability of the ecosystem to recycle materials.

Technology

Standard 4.5 - Knows that since there is no such thing as a perfect design, trade-offs of one criterion for another must occur to find an optimized solution.



Standard 4.6 - Knows that a design involves different design factors (e.g., ergonomics, maintenance and repair, environmental concerns) and design principles (e.g., flexibility, proportion, function).