



FOOD MATTERS

How What We Eat Affects Our Health and the Planet

by Roni Neff, Ph.D

Photo courtesy of Farm Sanctuary

Most animals raised for food or to produce food in the U.S. are raised on "factory farms," or CAFOs (concentrated animal feeding operations). CAFOs can have hundreds or thousands of cows or hogs, and tens or hundreds of thousands of chickens. (Source: www.epa.gov/mpdes/pubs/sector_table.pdf)

You are what you eat. We've all heard that expression countless times from parents and teachers who encourage us to eat healthily. But eating food is just one way you're affected by it. The way food is produced, processed, and distributed has an enormous impact not only on the quality and variety of food you eat, but also on the environment and the health of people involved in every aspect of what we call our food system.

I work at the Johns Hopkins Center for a Livable Future (CLF), an interdisciplinary academic center within the Johns Hopkins Bloomberg School of Public Health. Our work focuses on public health issues related to the food system, which we define as everything it takes to produce and process food, advertise and bring it to customers, prepare it, and dispose of it. This includes the people and businesses involved, and the places, processes,

policies, and politics that shape the whole system. Using "systems" thinking is useful for generating ideas for change, and for keeping us mindful of the fact that tweaking one part of the system can have ramifications throughout.

CLF conducts and supports research aimed at understanding the public health and environmental issues associated with our current food system; identifying ways to make our food system healthier and more sustainable; and communicating science in meaningful ways that educate, inform decision-making, and support change. In short, we want to help build a food system that is healthier for people and more sustainable for our planet.

Factory Food

U.S. agriculture is largely industrialized, with the farm being viewed as a factory with "inputs," such as pesti-

cides, feed, fertilizer, and fuel; and “outputs,” such as corn and chickens. Central to this industrial approach is the goal of increasing yields while decreasing production costs. In the last 50 years, vast tracts of land devoted to corn and soy have largely replaced farms that raise animals and grow fruits, vegetables, and a variety of grains. Animals raised for food or to produce food have been moved from farms to feedlots and confinement operations. And instead of family farmers, large corporations such as Tyson, Smithfield, Cargill, and ConAgra control much of the process and market.

The industrial food production model creates several problems. If land is used for growing only one type of

producers often say these methods are more economically efficient, yielding higher profits for operators and cheaper meat for consumers, they fail to acknowledge the significant environmental problems they cause. These include the difficulties in handling and proper disposal of the enormous quantities of animal waste, and the numerous public health risks such as antibiotic resistance, respiratory infections, and gastrointestinal effects, as well as health risks for workers and community members.

Cheap Food Is Expensive

Our industrialized food system does produce a lot of food cheaply. But the price we pay at the grocery store does not



The United Nations Food and Agriculture Organization estimates that 18% of world human-caused GHGs come from livestock production alone. The top sources are cow belching, deforestation for cattle grazing and growing soy for feed, methane from manure, and the nitrogen fertilizers used to produce feed crops.

Photos courtesy of Sustainable Table



crop year after year, diseases that affect that crop and insects that eat it will proliferate. To fend off such threats, farmers use large quantities of potent chemicals. And to get as much food as possible from the land, farmers rely on industrial fertilizers, which require enormous amounts of fossil fuels to produce and can end up in the water that runs off or seeps into local water supplies. Pesticides also end up in our water and on the food that we buy at the grocery store. The use of these chemicals in agriculture has been common since the 1940s, and the human health impact—including higher cancer rates—has been serious.

And that’s just crops. In the U.S., we produce almost 9 billion broiler chickens, 100 million hogs, and 100 million cattle each year. Most of these animals are raised in huge “factory farms” commonly referred to as CAFOs, or concentrated animal feeding operations. These facilities generally crowd animals into small spaces to minimize operational costs. While factory farm

include all the costs associated with producing the foods we are buying. Economists call these costs “externalities,” and they include costs to the environment, public health, and local economies that are not captured in the retail price of food. Some examples include the enormous government subsidies for agriculture, the cost of water pollution, human health effects from pesticide exposure, the obesity epidemic, and the loss of property values.

Current U.S. farm policy encourages farmers to grow the same five crops—corn, cotton, rice, wheat, and soybeans—and to make their farms as large as possible. So farms grow more and more of the same crops, using more land, pesticides, fertilizer, and water to do so, and depleting the soil and, in many cases, the water supply, at the same time.

Corn and soy are our biggest crops. About half of each goes directly to the domestic livestock industry for feed, and food manufacturers purchase and control much of

Cows are ruminants: they have four-chambered stomachs that allow them to digest grass. These cows are being raised sustainably on pasture. Those at left—on a feedlot with no grass—are fed mostly grains.

the rest. The artificially low prices have driven extensive innovation in incorporating corn and soy into food products. High-fructose corn syrup and soybean oil have become ubiquitous in processed foods, now far cheaper per calorie than many fresh and whole foods, and accordingly consumed disproportionately by low-income people. These consumers also suffer disproportionately from obesity and related health problems, such as diabetes.

The burgers and snacks in the store are cheap only if you stop counting at the checkout line. But in terms of

effects on the environment and public health, they're wildly expensive, both in dollars and in human impact.

Toward a Healthier, More Sustainable Food System

The good news is that there is growing recognition among scientists and the public that our current food system damages the environment and public health, and there is increasing interest in creating a better food system.

The number of farmers' markets is growing, and sales

Take Action

So what can you do to support sustainable agriculture? Here are some simple steps you can take to improve the quality of the food you eat and make changes in the food system.

Be conscious of what you eat.

Before you snack on that granola bar or that bag of chips, read the ingredients and understand what you're eating. Pay attention to where your fruits, vegetables, and meats come from. If you live in a rural area, don't assume that the meat and produce in your local grocery store or local restaurants comes from nearby farms.

Find questions to ask your grocer here:

www.sustainabletable.org/shop/questions

Make changes to your diet.

Your food choices are a way to vote with your fork to change business behavior. And many changes you can make to reduce the environmental impact of your food are also good for your health. These include substituting other forms of protein for meat (especially red meat) and seeking out sustainably produced options when you do eat meat, eating fresh produce in season, seeking organic and local food, eating fewer processed foods, eating less, and wasting less.

See these sites for help in changing your diet:

www.meatlessmonday.org

www.sustainabletable.org

Support local farmers.

Studies have found that some grocery-store produce has traveled 1,500 miles from the farm; the actual national average may be even higher. Supporting local and regional farms, including through farmers' markets, CSAs, and increasingly, at your supermarket, can benefit your area's economy, help

to ensure that your area can support itself with food into the future, and can significantly reduce fossil fuel use for transportation and refrigeration.

Find sources of locally produced food at these sites:

www.eatwellguide.org

www.localharvest.org

Spread the word and speak out.

If you change one person, you've changed one person. If you go to your school cafeteria and start demanding healthier and greener options, you've created a market for a lot of farmers and made it possible for a lot of kids to eat those healthier, greener foods.

Check out these sites to get connected and find resources:

www.farmtoschool.org

www.foodroutes.org

See these sites for some quick actions you can take today:

www.sustainabletable.org/getinvolved/takeaction

www.ucsus.org/food_and_agriculture

Consider a career in environmental public health.

We need the best and the brightest getting engaged in research—in biology, economics, geography, mathematical modeling, epidemiology, political science, engineering, agricultural sciences, behavioral science—and so on. We need people working on programs and policy, and communicating with the public and others. We need young farmers who recognize the intellectual challenges of developing sustainable agriculture practices. We need business people working toward adapting our food supply. And we need political leaders who understand that food policy is public health policy.

—Roni Neff

Photo courtesy of Sustainable Table.



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of organic food represent one of the fastest growing segments of the food market. There is similar vibrancy in local food efforts such as farm-to-school programs, converting urban lots into community gardens, and community-supported agriculture (CSA), in which consumers buy a whole season of produce in advance, direct from farmers. The 2008 Farm (and Food and Public Health) Bill contained multiple provisions to promote sustainable food production and make sustainable food more affordable and accessible.

These programs are small in the context of the Farm Bill's size. The next farm bill is probably five years off, but CLF and our colleagues in public health are working now to raise awareness that farm and food policy *is* public health policy. Many of the leading public health threats of our day—including climate change, environmental contamination and resource depletion, hunger and malnutrition, and the obesity epidemic—have strong roots in the current food and agriculture system.

As more people become aware of the personal, environmental and public health benefits that come with good food choices, hopefully consumer demand will help propel corporations and policy makers to make larger-scale changes toward a sustainable food system. In a 2007 position paper, the American Public Health Association emphasized the “urgency of transforming our food system to promote environmental sustainability, improve nutritional health, and ensure social justice.” Join us in working to achieve that transformation. You can start today, as soon as your next meal. **i**



Roni Neff is Research and Policy Director of the Johns Hopkins Center for a Livable Future and is on faculty at the Johns Hopkins Bloomberg School of Public Health. Her current research addresses themes including food system contributions to climate change, the food price crisis, the Farm Bill and public health, and access to healthy, sustainably produced food in Baltimore. She leads the American Public Health Association's Food and Environment Working Group, which works to build the profile of food system and public health issues within the APHA, the public health field, and beyond.

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One bonus of buying local food is variety, as seen in this array of potatoes at a Montana market.

Selected Resources

Johns Hopkins University Center for a Livable Future

www.jhsph.edu/clf

American Public Health Association Position Paper— Toward a Healthier, More Sustainable Food System

www.apha.org/advocacy/policy/policysearch/default.htm?id=1361

Community Food Security Coalition

www.foodsecurity.org

Ecohealth 101

<http://ecohealth101.org>

Food and Water Watch

www.foodandwaterwatch.org

Institute for Agriculture and Trade Policy

www.iatp.org

The Meatrix

www.themeatrix.com

Pew Commission on Industrial Farm Animal Production

www.ncifap.org

Public Health and Agriculture Gateway

<http://aphg.jhsph.edu/index.cfm>