

# Gleanings

A PUBLICATION OF GLYNWOOD CENTER

SUMMER 2006



## FARMING, FOOD AND HEALTH

By  
FREDERICK KIRSCHENMANN, PH.D.  
DISTINGUISHED FELLOW  
LEOPOLD CENTER FOR  
SUSTAINABLE AGRICULTURE  
IOWA STATE UNIVERSITY

# FARMING, FOOD AND HEALTH

*“Let food be thy medicine and medicine be thy food”*

**Hippocrates**

*“The key purpose of food and farming is—or should be—to advance the health and well-being of the population.”<sup>1</sup>*

**Tim Land and Geof Rayner**

During most of the industrial period the food industry has been fixated on providing as much food as cheaply as possible. Any connections between farming, nutrition, food and health were either assumed or ignored.

But human health cannot be maintained apart from eating healthy nutritious food, which requires healthy soil, clean water and healthy plants and animals. It’s all connected.

And in much of the industrial food system those connections have been disrupted with consequences that we are just beginning to glimpse, let alone understand.

## **THE QUEST FOR “CHEAP FOOD” IS CHANGING FOOD ITSELF**

“Cheap food,” we are told, is a cornerstone of our agriculture policy. It allows us to maintain our quality of life and is therefore a sacred principle of our food and farming system. However, in the quest for ever cheaper food, changes in production methods have changed food itself.

For example, at a recent meeting of the American Association for the Advancement of Science, Donald Davis, a biochemist at the University of Texas, reported on recent studies of fruits, vegetables and wheat that demonstrate that the nutrient value of these foods had declined by 5 to 35 percent during the last half century. Other reports have indicated a decrease in the value of some nutrients in meat and dairy products by as much as sixty percent. So the vitamins, minerals and proteins that you believe are part and parcel of the foods you buy may no longer be present at the levels they once were.

Scientists still argue about the cause of this nutrient dilution. Some believe it is due to the fact that we have not paid attention to soil health—relying instead on commercial fertilizers to insert a few essential nutrients into depleted soil. Others argue that it is due to the fact that we have only sought to maximize yields in our seed breeding programs, ignoring genetics that support nutrient value. Likely both are causes.

---

<sup>1</sup> “*Why Health is the Key to the Future of Food and Farming: A Report on the Future of Farming and Food*”, edited by Tim Land and Geof Rayner. As explained below, this report was made to the UK Commission studying the “*Future of Farming and Food*.”

Frederick Kirschenmann, a longtime leader in national and international sustainable agriculture, is Distinguished Fellow for the Leopold Center for Sustainable Agriculture at Iowa State University. This follows five years as Director of the Center, which was created by the Iowa Legislature to develop sustainable agricultural practices that are both profitable and conserve natural resources.

Dr. Kirschenmann received a doctorate in philosophy from the University of Chicago and holds an appointment in the ISU Department of Religion and Philosophy.

Dr. Kirschenmann, who has written extensively about ethics and agriculture, also oversees the operations of his family’s 3,500-acre certified organic farm in North Dakota.

He serves on the boards of several organizations and is on the Selection Committee for the Glynwood Harvest Awards.

The loss of nutrient value in fruits and vegetables is further exacerbated by the fact that the industrial system is based on large farming operations that are often far from where the food is consumed. It has been estimated that food travels on average 1500 to 2000 miles from farm to table. While fruit and vegetables may be genetically altered to retain their appearance during this long trip, vitamins are lost over time and protein breaks down. So the trip not only adds a “fuel tax” to the cost of food, it may also deliver food with reduced nutritional value.

Broader public health impacts may result from the routine use of antibiotics on animals in industrialized conditions. We have known for some time that overuse of antibiotics can cause antibiotic resistance. And while some physicians may still be over-prescribing antibiotics, by far the greatest antibiotic use is in animal feeding operations. While only 3% of all antibiotic use is prescribed for therapy in humans and 2% for therapeutic use in animals, 27% is fed to animals as a non-therapeutic ingredient in feed to increase the rate of weight gain and to prevent disease outbreaks in confined animal feeding operations. This is believed to have had the unintended consequence of contributing to the development of bacteria that are resistant to these antibiotics, which are critical to treating certain human infections. And such inputs into the food system cannot be fully isolated from the environment we all share. Antibiotics are now routinely found in lakes and streams.



**When possible, buy direct from local producers. The food will be fresher and tastier. It may also be more nutritious.**

**IS THIS FOOD REALLY “CHEAP”?**

The cheap food claim is based on a spurious metric. True, we spend less of our earned income on food than any other nation in the world—now a little less than 10%—but since our earned income is much higher than any other nation’s this hardly represents a useful measure.

A few years ago Chuck Benbrook, former head of the National Academy of Sciences Board on Agriculture, calculated the cost of food based on the cost per calorie, the basic unit of energy. By that metric the United States was 23rd on the list---22 countries had cheaper food than we do.<sup>2</sup> But even that metric is not adequate---what we really need to know is what our food costs us per nutrient value. If, as is becoming evident, the nutritional content of vegetables, fruit and meat delivered through the industrial system is diminishing, then the cost per unit of vitamins, minerals and proteins—which are critical to supporting our health—is increasing.

---

<sup>2</sup> A copy of this study can be obtained from Chuck Benbrook, Benbrook Consulting, Enterprise, Oregon, [benbrook@hillnet.com](mailto:benbrook@hillnet.com)

## RECONNECTING FARMING, FOOD AND HEALTH.

We now spend over 16% of our earned income on health care, and this percentage has been increasing during the same period of time that the percentage of our earned income spent on food has been decreasing. Could there be a connection?

Growing numbers of leaders in our health care system seem to think so. The Kaiser-Permanente hospital chain, the largest in the country, recently established a Food Policy Council to develop recommendations on how they can feed their patients and employees food that is more health-promoting. Several hospitals across the country are now purchasing local and/or organic food for their patients. They are following the lead of the many public elementary and secondary schools that are removing junk food and sodas from school vending machines, and colleges and universities that are providing more healthful food in cafeterias.

This new emphasis on the connection between farming, food and health is not limited to the United States. In 2001 the Labor Government in Great Britain created a Policy Commission on the Future of Farming and Food to advise the Government on how it could “create a sustainable, competitive and diverse farming and food sector which contributes to a thriving and sustainable rural economy, advances environmental, economic, health and animal welfare goals...”

One key report to the Commission, by professionals from agriculture, health care institutions, nutrition departments and policy organizations, was entitled “*Why Health is the Key to the Future of Food and Farming.*”<sup>3</sup> They concluded that the modern food system has been designed without considering human health. They advised that England needs “a modern, reformed Farming and Food Policy which takes full account of the health of the population” and asserted that “Health, therefore, is the key to the future of farming and food in England.”

The increasing awareness – on both sides of the Atlantic – of exploding health problems that are directly related to food and diet has resulted, in part, from the staggering rates at which obesity and diabetes have increased.

According to the Centers for Disease Control, in 1985 most states in the US did not even keep data on the percentage of their populations that were obese. Of those that did, only eight reported obesity rates

The way in which the cost of food per nutrient value affects people in resource poor areas was explained to me in especially poignant terms by a friend who lives in such a community in Chicago. There are no supermarkets in her community because no retail stores find it in their economic interest to place one there, the people in her community have no public transportation and few own cars. Consequently they cannot get to the closest supermarket four miles away to buy fresh fruits and vegetables and are reduced to buying highly processed foods, potato chips and Oreo cookies in local convenience stores and liquor stores. Most of those foods have almost no nutrient value. And that is “damned expensive food” as she put it. She is, consequently, trying to link organic farmers in her region with people in her community to provide them with nutrient dense foods, which she believes will be “cheaper” per nutrient value despite their higher cost per item.

---

<sup>3</sup> Tim Lang and Geof Rayner, editors, 2002. “*Why Health is the Key to the Future of Food and Farming: A Report on the Future of Farming and Food.*”

at the then highest levels of 10-14%. By 2002 no states had obesity rates under 14% while twenty eight states had rates of 20-24% and three states had over 25%. Rates of diabetes showed similar increases. In 1980 5.8 million Americans suffered from diabetes; by 1999 that number had almost doubled to 11.1 million.

While we may choose to believe that our food is cheap, the costs of associated impacts on our health, our environment and our society are anything but. In the US, the annual cost of treating obesity-related diseases now exceeds \$75 million. Taxpayers are burdened with half of this, through medicare and Medicaid.

While it can be argued that these epidemics have multiple causes, the fact that the food we eat is at least part of the problem can no longer be denied. And, of course the food we eat is closely linked to the farming and food systems we have developed. As the UK report concluded, over-consumption is a key problem and the current industrial food systems are designed to promote such over-consumption.



Eating a more diverse diet will encourage biodiversity in the fields used to raise your food.

### SO HOW SHOULD WE PROCEED?

There are many levels on which we can and must act to assure continued access to healthful foods and encourage the health of the ecosystem that supports us.

In the largest sense, we must transition from an industrially-based food system to one that is ecologically based. Our bodies are encapsulated by the ecosphere---the air, the soil, the water, the plants, the animals and all the other organisms that comprise what Aldo Leopold called “the land.” It is all connected. And there is little hope that we can achieve human health apart from a food and farming system that maintains the health—the capacity for self-renewal—of the ecosphere.

Many and complex policy changes at all levels will be required to accomplish this.<sup>4</sup>

At the same time, there are actions we can take as individual consumers to encourage this societal shift while promoting our own health. Here are four to start with:

- When possible, buy direct from local producers. The food will be fresher and tastier, and fruits and vegetables are less likely to be varieties that have been bred to increase yield and travel well at the expense of nutrient value.
- Reduce your consumption of overly processed foods and eat a variety of fresh foods. “Promoting a diverse diet, rich in vegetables and fruit, is the human consumption counterpart to the promotion of biodiversity in the fields.”<sup>5</sup> In other

---

<sup>4</sup> For an excellent set of recommendations regarding food and farm policy changes see [www.farmandfoodpolicy.org](http://www.farmandfoodpolicy.org).

<sup>5</sup> UK report. P. 13.



words, eating a more diverse diet will encourage biodiversity in the fields used to raise your food, especially if it is produced by diversified family farms rather than mass-production industrial mono-cultures.

- Encourage hospitals, schools, restaurants and caterers in your region to buy from regional farmers whenever possible.
- Ask the manager of your local supermarket to feature locally grown, organic or sustainably produced foods.

Changing our food system will not be easy. But recognizing that it will be difficult is not to say that it is impossible. What we can assume with some degree of certainty is that if we continue to limit the scope of our attention to producing a lot of “cheap food”, without attending to all the other components that make up our human and ecological health, then there will be little likelihood that we will achieve the goal of being healthy ourselves.

*Glynwood Center works with communities, and those who serve them, to address change in ways that conserve local culture and natural resources, while strengthening economic well-being. Glynwood Center does this by gathering, developing, testing and sharing ideas and initiatives from the United States and abroad.*

*Glynwood's Agricultural Initiative is helping to connect communities, farmers and food. The overall goal is to help sustain small and mid-size farmers whose work generates many public benefits including fresh, healthful food, scenic landscapes, wildlife habitat and sound local economies.*

*For more information about Glynwood Center and its Agricultural Initiative visit [www.glynwood.org](http://www.glynwood.org).*



P.O. BOX 157 COLD SPRING, NEW YORK 10516 TEL 845-265-3338 FAX 845-265-3391

[www.glynwood.org](http://www.glynwood.org)

©COPYRIGHT 2006 GLYNWOOD CENTER ♻️ PRINTED ON RECYCLED, CHLORINE FREE PAPER

*Gleanings* is an occasional series of publications through which Glynwood Center shares ideas drawn from its programmatic activities.

Photos: Michelle Carano 2006