

Hunger and environmental nutrition

newsletter



The Hunger and Environmental Nutrition Dietetic Practice Group

www.HENdpg.org

Agriculture, Food Security and Global Climate Change

by Teri Underwood, RD, MS, CD, HEN Newsletter Co-editor

CPE Instructions: This article is approved by ADA for 1.5 continuing professional education (CPE) credits. To apply for 1.5 free CPE credits, e-mail or snail-mail your completed quiz, full name, ADA registration number, full address and phone number, and name of the article you are applying for credit to: Michelle Voelker, RD; 3708 Adams Avenue; Des Moines, IA 50310; 515-279-9283; rvoelker1@mchsi.com. If you are not a HEN member, there is a \$25 fee for the credit, which will also grant you full HEN membership benefits for the remainder of the membership year. To receive credit, please contact Michelle for directions or see the HEN Web site at www.HENdpg.com.

Learning Objectives

After you read this article, you will be able to:

- List the three major greenhouse gases (GHG) and their sources.
- Describe how climate change has directly and indirectly affected U.S. food prices.
- Describe how climate change is predicted to affect poor countries and food security.
- List three techniques that agriculture can use to decrease greenhouse gases.
- List factors that are used in computer models to predict the affect of climate change on crop yield and food security.

Global climate change poses a threat to a sustainable food supply and will lead to many changes in America and the world. Dietitians need to be prepared for coming changes and the forefronts where they may be involved. Adaptation and mitigation strategies will be needed in the agricultural sector,

(continued on p. 3)

in this issue:

Food for Fuel Debate7

FNCE 2007 in Philly8

Book Review 10

Masthead Photo Credit: Mary Jo Forbord (HEN's chair-elect), her husband and three children own and operate Prairie Horizons Farm, a certified organic, rotationally grazed beef cow/calf operation on 480 acres in western Minnesota. The farm has been in the family for three generations, and includes more than 100 acres of virgin tall-grass prairie. The Forbords raise Lowline Angus cattle. Prairie Horizons Beef is sold directly to customers.

DEFINITIONS

Carbon Dioxide (CO2): the most influential greenhouse gas (GHG) in the atmosphere because it is by far the most abundant. It comes primarily from burning fossil fuels (coal, oil, gasoline, natural gas) and land-use change, such as converting forests to farmland. The current level of CO2 at 379 ppm in the atmosphere has increased from the pre-industrial level of 280 ppm and far exceeds the natural level that has occurred over 650,000 years. In the last 10 years it has been rising at the fastest rate since it has been measured. ¹

CO2 Fertilization Effect: enhancement in crop yields due to elevated levels of atmospheric CO2. This increases rates of net photosynthesis and reduces stomatal openings, resulting in increased water-use efficiency by the plant. ²⁰

Carbon Sequestration: the removal of carbon from the atmosphere and storage in the soil organic matter, vegetation (forests), ocean or other "carbon sink" to reduce CO2 levels.

Climate: the weather (temperature, precipitation, humidity, clouds, wind) averaged over a long period of time.

Food Security: exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. ²¹

General Circulation Model (GCM): a highly

complex computer model that calculates temporal and spatial transports of heat and moisture through the earth's surface and atmosphere to predict changes in climate caused by greenhouse gases.

Global Warming: the increase in the average temperature of the Earth's near-surface air and oceans in recent decades and its projected continuation. Global surface temperatures are projected to increase by 1.1-6.4°C (2.0-11.5°F) in the 21st century. ¹

Greenhouse Gases (GHG): the principle anthropogenic GHGs are CO2, methane and nitrous oxide. GHGs absorb heat (infrared radiation) radiated by the earth, preventing it from being radiated back to space, thus warming the lower atmosphere.

Intergovernmental Panel on Climate Change (IPCC): established by the World Meteorological Organization and U.N. Environment Programme in 1988 to assess available scientific information on climatic change, environmental and socioeconomic impacts and evaluate response strategies. The IPCC members are experts in the field of climate change. The IPCC does not conduct research on its own, but reviews and assesses the most recent evidence on climate change. IPCC publications are prepared by three Working Groups (WG I, II and III) composed of hundreds of scientists from many countries. These publications are generally recognized as the scientific consensus on climate change.

message from the chair

by Mary Jo Forbord, RD



Spring has nearly turned to summer, and we await just one more calf to be born to complete our class of 2007. Life on the farm bursts forth in May and June. We've become even more acutely aware of the spring surge since converting acres of row crops to permanent pasture. Grass takes the first opportunity to start converting energy from the sun into carbohydrate, beginning this year's generous offering of photosynthesis. We center our endeavors on how to efficiently and effectively convert the sun's energy into high-quality food. I manage Prairie Horizons Farm in western Minnesota with my husband, Luverne, and two sons, Joraan and Jaiden. Our daughter Meriah will marry this summer and grant us the great excitement of adding yet another wonderful young man to our family.

My other day job is that of Executive Director of the Sustainable Farming Association of Minnesota, a non-profit membership organization that fully recognizes the vital connection of healthy soil, high-quality food and human health. Thank you, Sustainable Farmers of Minnesota, for your support as I embark on my year as HEN Chair.

As incoming HEN Chair, I'll admit, it's a little daunting, and I've had some thoughts of how I could apply the brakes. How can I slow down this revved up, purring engine of The Little Practice Group that Could, maybe just long enough to catch my breath and enjoy a little of the scenery? Maybe if HEN had not spearheaded a broad and in-depth discussion of the Farm Bill...or if HEN had not received the Membership Award from ADA for having the highest percentage growth among practice groups less than 1000 members, the pace might be a little more relaxed. If HEN had not challenged ADA's position on Agricultural and Food Biotechnology, or wrote ADA's Organic Talking Points, or participated mightily in the writing of ADA's "Healthy Land, Healthy People: Building a Better Understanding of Sustainable Food Systems for Food and Nutrition Professionals," I might have time for a nap now and then. Maybe if I hadn't been inspired by so many students of the food system and former HEN leaders

working in concert toward HEN's mission, or if I hadn't worked alongside awesome and encouraging mentor/leaders like Helen Costello and Angie Tagtow, I could take a little siesta.

If I had skipped the incredible knowledge download from Joan Dye Gussow, Barb Hartman and Mary Pat Raimondi at the Minnesota Dietetic Association, and not witnessed the mixture of sweat and finesse necessary for Lynn Mader, Barb Adams, and our new HEN sponsor, Organic Valley Family of Farms, to serve up a dynamite organic and sustainably grown luncheon...if I'd left out traveling to organic farms with a busload of some of the greatest RDs on the planet, I'm sure I would be far more subdued and sleepy.

In reviewing the "mountain" of HEN accomplishments over the past year, the truth is, not one would I choose to undo. It's exhilarating and rare to be part of something as dynamic and alive as HEN. As a strong amalgam of dietetic professionals, we broaden each other's views, define the cutting edge of food system work, connect domestic and international hunger issues with agriculture, and share our diverse skills, vantage points and perspectives of food systems. We are the right people in the right place at the right time to create necessary and positive change. Full speed ahead!

message from the past chair

Thank you!

by Helen Costello, MS, RD, LD



It is with great satisfaction and confidence that I turn over the Chair position to Mary Jo Forbord — satisfaction from serving the most thought-provoking, passionate and dynamic members of ADA, and confidence in Mary Jo's natural leadership abilities and vast array of skills. Working with a fantastic leadership team and hearing from our members from across the country and around the world makes this position especially rewarding, and I look forward to that continued connection with the DPG. A full year-end report with our accomplishments for 2006-2007 will be issued at FNCE and in the fall newsletter.

Please join me in thanking our 2006-2007 leadership team for their dedicated service and in welcoming Mary Jo. Mary Jo comes to HEN with a breadth and depth of experience in sustainable agriculture and nutrition that served us well last year and will continue to do so this year and into the future. She brings the expertise and authority on small- and sustainable-farming issues and understands the full view of the scope of hunger and food insecurity.

Much thanks goes to Angie Tagtow for her tireless efforts and uncountable hours as a HEN leader. We will miss her on the Executive Committee, but she will continue to serve HEN as the *Journal of Hunger & Environmental Nutrition* (JHEN) liaison and on the Sustainable Food Systems Committee. Michelle Voelker is rotating off her position as Secretary. Her detailed organizational skills and considerable patience have held me to task more than once this year! Theresa Geldard will continue her second year as Treasurer, and I greatly appreciate her

professionalism and attention to the details of HEN finances.

We had a very active committee system this year, and you will find highlights of their accomplishments in the year-end report. I am pleased to be associated with this dedicated and talented group of food and nutrition professionals. Thanks to Teri Underwood and Tammy Vitale, Newsletter Co-Editors, Kim Prendergast, Web site Chair, Elizabeth Vukovich Gartlan, Nominations and Awards Chair, Caroline Baum Webber, Membership Chair, Erin Feld and Lorna Power, Student Committee Co-Chairs, Alison Harmon, Sustainable Agriculture and Food Systems Committee Chair, Rebecca Story, Domestic Hunger Committee Chair, Clare Young, International Hunger Committee Chair, Barbara Hartman, Networks Committee Chair, and Nancy Becker, Legislative Committee Chair. I would also like to thank Keecha Harris, the Professional Issues Delegate for HEN, and Danielle Bauer, our ADA Practice Team Manager, for their service to the DPG.

food cost may increase, availability of certain foods could change and there will be a push to reduce carbon dioxide (CO₂) emissions.

In early 2007, the Intergovernmental Panel on Climate Change (IPCC), more than 2500 of the world's top climate scientists, issued its *Fourth Assessment Report on Climate Change*. The report, adopted by governments in 131 countries, said climate change is unequivocal. The evidence shows the planet is heating up; there is no controversy on this. Thousands of worldwide data sets confirm elevations in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level. Eleven of the last 12 years rank among the 12 warmest years on record. It is known with 90-99% confidence that it is humans who have caused this warming, primarily from burning fossil fuels and land use changes, which have increased the concentration of greenhouse gases (GHG) in the atmosphere. What is not known, and where uncertainty rests, is how fast will it warm and exactly how the warming will affect weather patterns in specific areas.¹

Some of the many problems predicted to plague the future are shifting weather patterns; more frequent and prolonged droughts and heat waves; more extreme weather events, wind, floods, insects, erosion and weeds; sea level rise; and water scarcity. Climate and agriculture are interdependent. Crop yields are sensitive to changes in weather. And food security, obviously, is tied to crop yields. It is intuitive that climate change will affect the future of agriculture and food security.

Top scientists say there is less than a decade to cap CO₂ emissions or face serious consequences in the future. There is heightened world-wide awareness to this plea and mitigation is underway. In the first quarter of 2007, in the 110th Congress, several versions of climate change legislation were introduced. The best known legislation, the McCain-Lieberman bill, reduces CO₂ emissions (often referred to as "carbon emissions") to 2004 levels by 2012, 1990 levels by 2020 and 60% below 1990 levels by 2050 (4). That bill and several others are still pending in the Senate Environment and Public Works Committee and the House Energy and Commerce Committee. Due to the complexity of the bills and the controversial nature it is unlikely that a comprehensive bill will pass in this congress, but future action is inevitable.

With climate change, dietitians will be needed to advise the general public, the media, health-care institutions, government agencies and other entities on nutrition and health, food purchasing, menu planning, meal preparation and diet. Changes in diet and purchasing practices will be needed in the effort to reduce fossil fuel use and cut GHG emissions. Dietitians are food and nutrition experts, trained to communicate complex science and policy issues, such as climate change, to the general public in terms they can understand and use in their daily lives. To be effective in these leadership roles, dietitians must be knowledgeable of the science of climate change as it relates to agriculture and the food supply.

Climate Change Impacts to Agriculture and Food Supply

The general public still argues about whether global warming is occurring. But in scientific circles there is no controversy—there is solid proof that climate change is happening right now. Observed evidence, discussed in more detail below, shows that climate and natural systems reliant on climate are changing.

To understand the science about climate change, agriculture and food security, it is important to differentiate between observed changes and future predictions. Observed data is stronger, especially if there are several similar observations. Uncertainty revolves around future scientific predictions, which usually rely on complex computer models. Observations, models and future predictions will be discussed below.

Observed Impacts to Agriculture and Food Supply

Scientific observation of the world's weather since 1961 shows that the climate is changing. There have been widespread changes in extreme temperatures in the last 50 years, more intense and longer droughts over wide areas since the 1970s, particularly in the tropics and subtropics and significantly increased precipitation in eastern parts of North and South America, northern Europe and northern and central Asia. In addition, the incidence of heavy precipitation events has increased over most land areas.¹

In the last three decades, earlier springs, earlier snowmelt and northern migration of plant and animal species have been observed. Although established trends have not yet been documented, agricultural impacts

(continued on p. 4)

HEN MISSION

Leading the future in sustainable and accessible food and water systems through dietetics education, research and action.

HEN VISION

HEN members are the most valued source of nutrition services to promote access to nutritious food and clean water from a secure and sustainable environment.

THE BENEFITS OF HEN MEMBERSHIP INCLUDE:

- Quarterly newsletter with occasional CPE articles and reproducible fact sheets.
- Access to the HEN listserv that provides the latest information and relevant conferences.
- Special subscription rate to the *Journal of Hunger & Environmental Nutrition* published by Haworth Press, Inc.
- Member-only access to articles and resources via the HEN Web site — www.HENdpg.org.
- Collaboration with food and nutrition professionals across the United States and the world.
- Opportunity to be nominated for HEN awards.
- Notices of related conferences around the country.
- Potential for national and international recognition when working on HEN projects.
- Eligible to vote for HEN Executive Committee election.

This issue of *the Hunger and Environmental Nutrition Newsletter* has been printed and mailed with the compliments of The Haworth Press, Inc.



of climate variation are seen in the published literature. Documented impacts include earlier spring planting of crops in the Northern Hemisphere and reduced crop yields in the Sahelian region of Africa due to a reduced growing season from warmer and drier conditions. In southern Africa, longer dry seasons and changes in precipitation patterns are prompting adaptation measures.¹

Climate change has already affected global food production, according to a recent study of the world's six most widely grown crops: wheat, rice, maize, soybeans, barley and sorghum. These crops account for >40% of global cropland area, 55% of non-meat calories and >70% of animal feed. Average yields for the six crops from 1961-2002 were compared to temperature and precipitation data over the major growing regions. Wheat, maize and barley yields were significantly reduced in response to increased temperatures, decreasing by 3-5% for each 1°F rise in average temperature. Since 1981, global warming has led to an annual combined loss of 40 million metric tons and \$5 billion per year.³

An indirect impact of climate change is the rising cost of food. Recently, the push to reduce dependence on fossil fuel and find renewable sources of energy has led to a surge in the production of corn-based ethanol. In 2006, five billion gallons of ethanol were produced, representing 20% of the U.S. corn crop. By 2010, 30% of the corn crop will be diverted to ethanol. The diversion of corn-crop production away from food for people and livestock toward ethanol is being manifested in U.S. food prices, up 3.7% for the first quarter of 2007, with corn futures up 66% from September 2006 to March 2007.⁴

Presently, we have witnessed documented impacts to the cost of food, food production and climate. With continued warming on the horizon, scientists are working hard to determine what the future will bring for agriculture.

Predicted Impacts to Agriculture and Food Supply

Computer Models

Predicting the affect of climate change on future food supplies is a complex process. Numerous factors influence crop yield. These include ozone, temperature changes, wind, changes in precipitation, droughts, extreme weather, changes in seasonal variability, water availability, insects, weeds, and type and condition of the soil.⁵ Food security depends on factors such as population growth, technological trends, economic growth, gross domestic product and land use development.^{6,7} Comprehensive studies typically use

several computer models, integrating various socio-economic, climatic, and agricultural data sets. The models may use a regional, national or global scale. In an effort to quantify projections of a potential (climate-related) future, the IPCC has devised various climate scenarios, modeling guidelines and other baseline data sets for researchers to use.^{6,8} In the past decade, climate models have been improved and observations expanded, allowing for more confident assessments between observed warming and impacts.^{1,9}

Predicted Impacts to Global Food Supply

A series of studies, used as a basis for IPCC conclusions, involved measuring yields of wheat, rice, maize and soybean (which account for 85% of the world's traded grains and legumes) under various scenarios using validated crop models. Measurements were done at 112 sites in 18 countries representing major crop production areas and vulnerable regions at low, mid and high latitudes. Crop yield results were integrated with a dynamic model of the food system that included population, technology trends and economic growth. The results showed that climate change is likely to reduce global food potential and the risk of hunger will increase in most marginalized economies.⁷

Poor countries are projected to see decreased food security in as soon as one decade. Many developing nations are at lower latitudes and are projected to have a decline in crop yield for even small local temperature increases (1-2°C). In addition, poor countries do not have resources to adapt and are expected to experience concomitant stress to declining water resources. The most vulnerable industries, settlements and societies are generally those in coastal and river flood plains and those whose economies are closely linked with climate-sensitive resources. This is especially noticed in Africa, where agricultural production and access to food are projected to be severely compromised by climate variability. In some African countries, yields from rain-fed agriculture could be reduced by up to 50% by 2020.¹

Impact projections for net global harvest are dependent on temperature increases and will be mixed across the world. With temperature rises of 1-3°C, the net global harvest will be similar to baseline, but the impacts will vary widely with location. Some areas, such as the Northern Hemisphere, will see higher crop yields, whereas other areas will experience declines. The immediate food future for North America appears brighter—as moderate climate changes in the early decades of this century are projected to increase aggregate yields of rain-fed agriculture by 5-20%. But later in the century, with temperature rises greater than 2-3°C (3.6-5.4°F), all regions will

experience declines.¹

Large regional variation in U.S. crop yield is reported in two studies. One study reports that winter wheat and corn crops could see up to a 76% decline in extreme cases and increases of 31% with other scenarios.¹⁰ Another recent study looking at U.S. crop production under 12 climate change scenarios found the overall crop production varying ±25%. Regional changes were much larger, up to ±50% depending on changes in precipitation and temperature predicted.¹¹

In the past decade, considerable study and debate has gone into the CO₂ fertilization effect on crop yields. This topic is important because future projections on global food supply are linked to it. Several studies have suggested that rising CO₂ levels will counter the negative effects of climate change on agriculture.² However, according to a recent paper, the CO₂ fertilization effect, factored into IPCC model studies used to make conclusions about global food supply, has been overestimated because models did not account for the damaging effect of rising atmospheric ozone. The croplands of North America are being exposed to rising ozone levels. This will lead to large yield losses in the Northern Hemisphere. Ozone has been recognized since the 1970s as a factor that lowers the yields of major food crops.⁹

Other threats to global food supply being investigated include an increase in invasive, noxious weeds, more outbreaks of a wider variety of insects and pathogens and reduced milk production in the dairy industry from rising temperatures.¹² Global sea-level rise is another significant risk to food security. By the 2080s, millions of people living in low-lying areas are expected to be flooded from their homes and cropland. The areas most affected will be the deltas of Asia and Africa.¹

Water Supplies

One of the most worrisome impacts of climate change is the projected decline in the world's fresh water supplies. As early as 2050, one billion people in Central, South, East and Southeast Asia will be at risk for water stress from the combined pressures of climate change, population growth and development. Water supplied by melt water from glaciers and snow in major mountain ranges, where more than one-sixth of the world population currently lives, is also expected to decline.¹

In the United States, irrigated farm land comprises 18% of the cropland and is the largest consumptive user of fresh-water resources. Thomason et al.¹¹ looked at U.S. irrigated and non-irrigated grain production (corn, soy and wheat) and water resources under 12 climate scenarios. Significant change

(continued on p. 5)

(±50%) to U.S. water supply was found, but simulations disagreed on whether the U.S. would experience shortfalls or surpluses and which regions would be most affected. They found that in some regions, precipitation decreased so much that water supplies were not adequate; in other regions, precipitation became so plentiful that water logging and flooding became a concern. Under all scenarios, available land for irrigated grain crops declined.

Another recent study appearing in the journal *Science* found water challenges ahead for the southwest United States. Nineteen climate models from research institutions around the world showed broad consensus that Southwestern North America will dry significantly in the 21st century. The study showed that the transition to a more arid climate should already be underway.¹³

Adaptation and Mitigation

Despite the dismal predictions described above, it is encouraging to know that there are numerous adaptation techniques available to agriculture to fight the challenge of climate change and much that can be done to reduce GHG emissions to reduce negative impacts.

Adaptation

Farmers have many methods already available to them to adapt to climate changes, and research is being undertaken to find new ways. Techniques suggested include new crops that can withstand heat, drought or flooding, changes in tillage practices, changes in planting and harvesting dates, increasing irrigation efficiency, changes in fertilizer use and expanding or abandoning agricultural lands.¹⁴ The IPCC reports that use of adaptation techniques could allow low- and mid- to high-latitude cereal yields to be maintained at or above baseline yields for modest warming.¹

Some of the adjustments being suggested for agriculture are in line with sustainable farming practices, particularly soil management (discussed in more detail below). Proposed climate change strategies, however, may contradict the concept of agricultural sustainability. One example of this is the push to develop new genetically engineered crops that are heat and drought tolerant and better adapted to new climatic and atmospheric conditions.⁶ Another is the suggestion to shift agricultural regions to adapt to climate change.¹⁴ This adaptation could force invasion of new areas that are now forested ecosystems, and put tremendous strain on the natural environment and wildlife.

Mitigation

When thinking about climate change, we might be focused on the impacts to agriculture and the food supply. However, it is important to remember that agriculture is also one of the causes of climate change. Several agricultural practices emit GHGs into the atmosphere—burning and clearing of forests to be used as cropland and pastures, flooding land for rice cultivation, raising livestock and use of nitrogenous fertilizer. Agriculture emissions of the principle GHGs, CO₂, methane and nitrous oxide (N₂O) constitute 20% of total anthropogenic sources.⁶ Several mitigation techniques are being suggested in the agricultural sector to reduce emissions and reduce atmospheric GHGs.

Carbon Sequestration

A large proportion of the mitigation potential of agriculture arises from soil carbon sequestration. Carbon is stored in the earth's soil, forests and oceans. On a global basis, soil is the second largest carbon sink, next to the oceans. It holds 1.5 to 3 times the carbon as living vegetation.⁶ Carbon sequestration has the capacity to offset 5-15% of the global fossil-fuel emissions. Many techniques to increase soil carbon storage are in harmony with sustainable farming practices and include no-till farming, cover crops, water conservation, improved crop and grazing land management and restoration of degraded lands. Another benefit of increasing the carbon pool of degraded soils is that this increases crop yields and thus has the potential to enhance food security.¹⁵

Reducing Nitrous Oxide and Methane Emissions

According to the IPCC, considerable mitigation of climate change could occur from reductions in methane and N₂O in some agricultural systems.¹ N₂O is a potent GHG, 200 times more influential than CO₂ on a unit volume basis, but has a smaller greenhouse effect because it occurs at a much lower concentration in the atmosphere. U.S. agriculture emits nearly three quarters of the U.S. N₂O, primarily from application of fertilizers, biomass burning and land-use change.⁶ Techniques to reduce N₂O include improved nitrogen fertilizer application, energy efficiency and expansion of biofuels to replace fossil fuels.¹

Methane, while 20 times as potent as CO₂ on a unit volume basis, is the second most influential GHG because it occurs at lower concentrations in the atmosphere. Agriculture is responsible for 40% of methane emissions coming mostly from rice paddies, burning of biomass and raising livestock.⁶ Techniques to reduce methane include livestock and manure management. One example of manure

management is being undertaken at a dairy farm in Rupert, Idaho. The farm was bought by two engineers who will use an “anaerobic digester” to convert methane in manure from 6,400 dairy cows into 270,000 cubic feet of natural gas per day, enough to heat 1,500 homes. A “post-digester” in the works would process and compost, making fertilizer.¹⁶

When discussing mitigation of climate change as it relates to agriculture and food security, it is important to bring in the topic of meat. According to a recent U.N. FAO Report,¹⁷ the international meat industry produces roughly 18% of the world's global warming gases, more than transportation. Much of this results from nitrous oxide in manure and methane. Factory-style meat production contributes excessively to GHG emissions and uses large amounts of fossil-fuel based inputs such as chemical pesticides and fertilizers. Using grain as a feed involves a large energy loss. The conversion of grain to beef is energy inefficient since 7 kg of grain are required to produce 1 kg of beef (7:1), 4 to 1 for pork and 2 to 1 for chicken.¹⁸

Summary

Indirect and direct effects of global climate change are already being seen in agriculture and the food supply. Many changes are likely on the horizon, including higher food prices and a changed or decreased global food supply. When considering agricultural adaptation and food security, developing and poor countries, particularly Africa, are most vulnerable. Rich countries that can put resources into adaptation are less vulnerable. Fresh water supplies and quality will likely be affected, increasing risk for water scarcity for a large percent of the world's people and challenging the agricultural response. Costs and benefits of global climate change for agriculture and food security will vary widely by location and scale. In the aggregate, however, the net effects will tend to be greater with increased GHG emissions (and temperature). Much is unknown about how fast the changes will occur or where they will take place. Despite the negative implications of global warming, numerous mitigation and adaptation strategies are available that give hope to the challenge of reducing the impact. Several strategies, such as crop-rotation, cover crops, no-till or low-till farming, reduced use of nitrogen fertilizer, manure management and soil management are the same as those promoted by sustainable agriculture. Sustainable agriculture recognizes that natural resource inputs are finite and is concerned with the long-term integrity of the food supply.¹⁸ The American Dietetic Association's Sustainable Food Systems Task Force has developed guidelines to

(continued on p. 6)

encourage ADA members to assume leadership roles in the promotion of sustainable food systems.¹⁹

1. Intergovernmental Panel on Climate Change. Climate Change 2007: Summary for Policy Makers. Working Group I: The Physical Science Basis, Working Group II: Impacts, Adaptation and Vulnerability, Working Group III: Mitigation of Climate Change. Available at: www.ipcc.ch/SPM2feb07.pdf. Accessed March 19, 2007.
2. Motavalli J. The can-do congress? With democratic control comes a flood of climate and energy initiatives. *Environment Magazine*. May/June 2007.
3. Lobell DB, Field CB. Global scale climate-crop yield relationships and the impacts of recent warming. *Environ. Res. Lett.* 2007;2(014002):1-7.
4. Pritchard C. Climate: The food chain's weakest link. *MarketWatch*. Available at: www.marketwatch.com/news/story/special-report-climate-us-food/story.aspx?guid=%7BF97F4CE0%2D6CC9%2D492C%2D9F84%2DF3DCCA31B27A%7D. Accessed May 17, 2007.
5. Pritchard S, Amthor J. Crops and Environmental Change: An Introduction to the Effects of Global Warming, Increasing Atmospheric CO₂ and O₃ Concentrations and Soil Salinization on Crop Physiology and Yield. Binghamton, N.Y.:The Haworth Press, Inc.; 2005.
6. Rosenzweig C, Hillel D. Climate Change and Global Harvest, Potential Impacts of the Greenhouse Effect on Agriculture. Oxford, U.K.: Oxford University Press; 1998. 324 p.
7. Parry M, Rosenzweig C, Livermore M. Climate change, global food supply and risk of hunger. *Phil. Trans. R. Soc. B.* 2005;360:2125-2138. Available at: <http://www.journals.royalsoc.ac.uk/content/f0236q7315r1pp20/fulltext.pdf>. Accessed May 14, 2007.
8. The IPCC Data Distribution Centre. Available at: <http://www.ipcc-data.org/index.html>. Accessed May 15, 2007.
9. Long SP, Ainsworth EA, Leakey ADB, Morgan PB. Global food insecurity. Treatment of major food crops with elevated carbon dioxide or ozone under large-scale fully open-air conditions suggests recent models may have overestimated future yields. *Phil. Trans. R. Soc. B* 2005;360:2011-2020. Available at: www.journals.royalsoc.ac.uk/content/uru7187x51655776/fulltext.pdf. Accessed May 15, 2007.
10. Brown RA, Rosenburg NJ. Climate change impacts on the potential productivity of corn and winter wheat in their primary United States growing regions. *Climatic Change*. 1999;41:73-107.
11. Thomson A, Brown R, Rosenberg N, Izaurrealde C. Climate Change Impacts for the conterminous USA: An integrated assessment, Part 3: Dryland production of grain and forage crops, Part 4: Water resources, Part 5: Irrigated agriculture and national grain crop production. *Climatic Change*. 2005;69:43-105.

Global Climate Change Newsletter Questions:

- 1) Average yields between 1961 and 2002 for maize, wheat and barley have decreased due to changes in temperature and precipitation by what percentages for each 10° Fahrenheit?
a) 3 – 5% b) 5 – 10%
c) 12 – 15% d) 15 – 20%
- 2) It is predicted that by 2020, climate variability may reduce yields from rain fed agriculture in African countries by:
a) 20% b) 30%
c) 40% d) 50%
- 3) Production of corn based ethanol in 2006 was 5 billion gallons, representing what percentage of the U.S. corn crop?
a) 5% b) 10%
c) 20% d) 25%
- 4) Using grain as a feed involves a large energy loss. It requires how many Kg of grain to produce 1 Kg of beef?
a) 2 b) 4
c) 7 d) 10
- 5) Burning and clearing forest, and flooding land for rice cultivation contribute to:
a) carbon sequestration
b) green house gases
c) CO₂ fertilization effect
d) A & B
- 6) Carbon sequestration has the capacity to offset what percentage of the global fossil-fuel emissions?
a) 5-15% b) 15-20%
c) 20-25% d) 25-35%
- 7) Application of fertilizers, biomass burning and land-use change are examples of how agriculture emits nitrous oxide. What percentage of nitrous oxide produced in the U.S. comes from agriculture?
a) 15% b) 25%
c) 50% d) 75%
- 8) Poor countries are at high risk for food insecurity because:
a) They tend to be at low latitudes where crop yields will be reduced with small temperature increases.
b) They have fewer resources to allow adaptation.
c) They are expected to experience water scarcity along with climate change.
d) All of the above.
- 9) Sustainable agriculture techniques that help decrease greenhouse gases include:
a) high nitrogen content fertilizer
b) deep till farming
c) cover crops
d) drought resistant crops
- 10) Computer models used to predict the affect of climate change to crop yields and food security include many factors including:
a) ozone and temperature changes
b) wind and changes in precipitation
c) insects and weeds
d) A & B
e) All of the above
12. Overview of climate change impacts on agriculture. Available at: www.climateandfarming.org/clr-cc.php. Accessed June 20, 2007.
13. Seager R, Ting M, Held I, Kushnir Y, Lu J, Vecchi G, Huang H, Harnik N, Leetmaa A, Lau N, Li C, Velez J, Naik N. Model projections of an imminent transition to a more arid climate in southwestern North America. 2007. Available at: <http://www.sciencemag.org/cgi/content/short/1139601v2>. Accessed April 12, 2007.
14. USDA, Economic Research Service. Global climate change: questions and answers. Available at: www.ers.usda.gov/Briefing/GlobalClimate/Questions/Ccmqa6.htm. Accessed May 13, 2007.
15. Lal R. Soil carbon sequestration impacts on global climate change and food security. *Science*. 2004;304(5677):1623.
16. Blank M. Cow power; entrepreneurs hope to cash in on Idaho dairy country's stinky problem. *High Country News*. 2007;39(9);6.
17. Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, de Haan C. Livestock's long shadow, Environmental issues and options. The Livestock, Environment, and Development (LEAD) Initiative, U.N. Food and Agricultural Organization. 2006, 390 p. Available at: www.virtualcentre.org/en/library/key_pub/longshad/A0701E00.htm. Accessed April 12, 2007.
18. Horrigan L, Lawrence RS, Walker, P. How sustainable agriculture can address the environmental and human health harms of industrial agriculture. *Environmental Health Perspectives*. 2002;110(5):445-456.
19. American Dietetic Association Sustainable Food System Task Force. Healthy land, healthy people: Building a better understanding of sustainable food systems for food and nutrition professionals. Available at: www.eatright.org/cps/rde/xchg/ada/hs.xsl/home_11965_ENU_HTML.htm. Accessed May 24, 2007.
20. Kaiser H. Implications of climate change of U.S. agriculture. *American Journal of Agricultural Economics*. 1995;77(3):734.
21. FAO. Food security: concepts and measurement. Available at: www.fao.org/DOCREP/005/Y4671E/y4671e06.htm. Accessed May 10, 2007.

Distilling the Facts in the “Food for Fuel” Debate

by Helen E. Costello, MS, RD, LD

The desire to reduce U.S. dependence on foreign oil has ignited a national debate about how to develop alternative fuels from renewable resources. Lawmakers in Congress are rushing to support biofuel legislation with a conviction not witnessed since President Carter advocated fuel conservation and alternative fuels research in 1977. U.S. Representative Collin Peterson (D-MN), Chair, House Committee on Agriculture, introduced H.Con.Res.25, calling for the United States to produce 25% of its energy from renewable resources from working lands by the year 2025.¹ The resolution includes the conversion of cropland to more corn for ethanol production. It also includes a provision to continue to provide safe, affordable and abundant food in the United States. The debate is of interest to food and nutrition professionals who predict a negative impact on food security from higher food prices because of the competition for cropland for fuel.²

On August 8, 2005, the Energy Policy Act of 2005 (H.R.6) was signed into law. It calls for the United States to produce 7.5 billion gallons of renewable fuels annually by 2012. According to the ethanol industry Web site, there are 114 ethanol biorefineries nationwide producing almost five billion gallons of ethanol annually.³ There are an additional 80 refineries under construction. Ethanol biorefineries convert biomass such as corn, sugar, cassava and grasses into ethanol for fuel, either as a gasoline additive or as fuel in vehicles adapted to the technology. Biodiesel is a separate technology and derived from oils from plants such as sunflower seed or soybeans. The focus of this article will be corn-derived ethanol and its projected impact on the environment, hunger and food insecurity.

Macro-level Effects of Corn for Ethanol

The changes in cropping patterns to meet expected corn demand will have significant effects on food production, food prices and the environment. In 2006, ethanol represented only 3.5% of motor vehicle gasoline supplies in the United States and 14% of the corn market.⁴ In 2007, the USDA Economic Research Service predicts that 20% of the corn crop will be used for ethanol production. By 2009/2010, ethanol will consume 30% of the corn crop yet supply less than 8% of the gasoline supply.⁵ To achieve these projections, agriculture will not only have an impact on the environment and food security, but also require structural adjustments in the industry.

The changes needed to meet the demand for ethanol for energy production include: 1) exporting less corn, 2) improving corn yield, 3)

converting additional acreage for production and 4) greater reliance on technology. In doing so, it is projected that some farmers will not renew participation in the Conservation Reserve Program (CRP) because as the price of corn rises it will be more profitable to grow on marginally productive land rather than receive the CRP payments.⁵ If this occurs, it is predicted that corn's intensive nitrogen and water requirements will have a net negative impact on the environment including loss of topsoil, increases in nitrogen and pesticide runoff into groundwater and loss of biodiversity. Another environmental concern is the large investment in petroleum-based natural resources to produce more corn and convert it to ethanol, which also affects its net energy benefit.

The net energy benefit of using crops and vegetable oils for ethanol production differ widely among the crops used. In a paper published in the Proceedings of the National Academy of Sciences in 2006, Hill et al. compared studies that showed the Net Energy Benefit (NEB) of producing corn and soy for fuel.⁶ Corn produced for fuel yields approximately 25% more energy than required for its production compared with soy, which yields approximately 93% more energy than required for production. Currently, additional research is underway to convert cellulosic plant materials into fuel. Cellulosic materials such as wood, switch grass and corn stover also have low NEB.

Changes in production practices affect the food supply. Farmers may decide to change their conservation practices to stop rotating their corn crop with soy; corn will be grown in place of other crops, and it will be grown on marginal lands susceptible to environmental degradation. The net results will likely be less domestic grain production for food and livestock feed, thereby raising consumer prices for food.^{4,7,8}

What Does Structural Change in Agriculture Mean for Low-Income Consumers?

Farmers are understandably planting more corn because, for now, it is profitable to do so. This shift in production and its current growth trajectory will change the structure of agriculture in a way not seen since World War II. Trade balance shifts in agriculture will occur as less soy and cotton are available for export. Corn and soy, as major raw ingredients in most processed food products in the United States, have increased in price, resulting in increased food prices.

According to the USDA Economic Research Service, the price of food is volatile and when

the cost of an input, such as a raw ingredient, increases, there are usually several conditions that have an impact on food costs: 1) the input is a major ingredient, 2) the input has few other substitutes, 3) consumers do not have substitutes for the product and 4) temporary sharp increases occur such as those due to weather or transportation problems.⁹ These are some of the factors that determine how much and how long prices will rise for a given food product.

The Consumer Price Index for all foods increased by 2.3% in 2006 and is expected to rise by 3-4% in 2007.⁹ A 3-4% increase in food costs may not be appreciably noticeable in families with higher incomes, but for a low income family the increase is considerable in comparison to their weekly budget. For example, if a family of four earning \$20,800 a year spends the U.S. average of 10% of their disposable income for food, \$2,080 per year (\$40 per week), an increase in food prices of 4% will cost them a week's worth of groceries. In reality, most households with such limited resources spend 25-30% of their income on food. In this example the family would be spending \$120 per week on food and a 4% increase in food prices would be the equivalent of two weeks of groceries. This is a simplistic calculation; however, the critical message is that people who are living at or below poverty are more price sensitive and have less capacity to absorb even small elevations in price.

An effect that hasn't been analyzed is the impact on the U.S. emergency food system. Food banks rely on donations of food from the food industry as well as funding to purchase food. The foods most affected by the high price of corn are processed snack foods, beverages containing high fructose corn syrup, meat and poultry. Food banks are challenged to source high-quality protein. This may become increasingly more difficult if meat and poultry prices rise at levels that decrease overall demand and limit what is available from meat distributors who donate to food banks.

It is expected that ruminants may be able to use some of the distillers' waste from ethanol production as livestock feed, thereby providing another source of feed if corn supplies cannot meet demand at affordable prices. Mono-gastric animals such as hogs and poultry, however, cannot use this product as feed. Pork and poultry will be more expensive to produce and less available for food banks already struggling to provide food pantries, soup kitchens and shelters with

(continued on p. 9)

2007 FNCE activities

HEN DPG Executive Committee & Member Business Meeting

Saturday, September 29, 2007

To connect early with HEN members at FNCE, meet us on Saturday at noon for lunch at the Reading Terminal Market. HEN's Executive Committee Meeting and Member Business Meeting will follow lunch.

LUNCH: 12:00 Noon

Meet fellow HEN members in the seating area at the Reading Terminal Market Fair Food Farmstand.

HEN DPG Executive Committee Meeting:

1:00 pm - 3:00 pm

Philadelphia Marriott Downtown
 1201 Market Street, Room 403



Let Them Eat Grass: Pasture-Raised Meats for Health and Flavor

Presented by
 Mary Jo Forbord, RD
 and Shannon Hayes,
 PhD

Sunday, September 30, 2007

8:00 am - 9:30 am

Philadelphia Convention Center

Mary Jo Forbord, RD, is the Executive Director of the Sustainable Farming Association of Minnesota. A fifth generation farmer, Mary Jo and her family raise certified organic pasture-fed beef at Prairie Horizons Farm, and sell directly to customers. Mary Jo is the chair of the Hunger and Environmental Nutrition Dietetic Practice Group. Shannon Hayes holds a Ph.D. degree in sustainable agriculture and community development from Cornell University. Her research areas include agricultural transitions in New York State, grassroots sustainable agriculture development initiatives, sustainable cuisine, and community welfare. Shannon is a partner on Sap Bush Hollow Farm, a diversified grass-based livestock operation, specializing in meat science, product development and marketing. Shannon is a writer, cooking teacher and author of *The Grassfed Gourmet* (2004) and *The Farmer and the Grill* (2007).

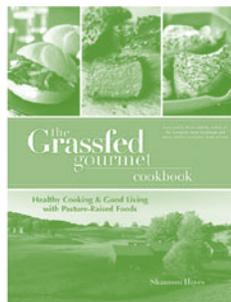
Shannon Hayes Book Signing

Sunday, September 30, 2007

10:30 am - 11:30 am

Philadelphia Convention Center Expo Hall

Following the HEN DPG priority session, Shannon Hayes will be signing her books *The Farmer and the Grill* and *The Grassfed Gourmet Cookbook* in the FNCE Expo Hall.



HEN & PHCN DPG Member Reception

Sunday, September 30, 2007

6:00 pm - 8:00 pm

Reading Terminal Market

On Sunday evening HEN and Public Health/Community Nutrition (PHCN) DPG members are invited to the joint member reception at the Reading Terminal Market, featuring locally grown seasonal foods. Both practice groups will co-host the event as they highlight their accomplishments and present awards. Our members do amazing work, and this is our chance to recognize the most outstanding contributions and network. Shannon Hayes will also be available to sign her new book. If you are planning to attend the joint reception, please send a RSVP to register early by contacting Mary Jo Forbord at 320-760-8732 or sustainablefarming@hcinet.net.

2007 HEN DPG Premiere Film "Feastival" - A Smorgasbord of Films About Food

Sunday, September 30, 2007

8:00 pm - 11:00 pm

Reading Terminal Market

Immediately following the member reception, HEN invites you sit back, relax and get comfortable for our inaugural HEN Film "Feastival" - A Smorgasbord of Films About Food. HEN's leadership is particularly excited about showing a carefully selected few of the most thought-provoking food system short films, while munching on locally grown popcorn; soft pretzels, local microbrews, wine and root beer, and savoring the rich

discussion for dessert. Register today for this must-attend event by contacting Mary Jo Forbord at sustainablefarming@hcinet.net or 320-760-8732.

Changing Demographics and Consumer Trends: Nutrition Education Goes Beyond the Calories*

Presented by Amanda Archibald, RD

Tuesday, October 2, 2007

9:45 am to 11:45 am

Philadelphia Convention Center

In a dynamic marketplace, food and lifestyle choices may be influenced increasingly by socio-economic and environmental factors, and less by a lack of personal responsibility or unwillingness to change. In the same vein, the evolution of food products and menu concepts reflects rapidly changing consumer demographics. It is important for public-health nutritionists and community nutritionists to understand what factors influence consumers and the marketplace, and why that understanding is critical to delivering meaningful and actionable nutrition messages. Amanda Archibald is a member of the HEN DPG.

* This session is organized by the PHCNPG.

Mother's Room

Sunday, September 30, 2007 to

Tuesday, October 2, 2007

9:00 am - 4:00 pm

Philadelphia Convention Center

In support of our ADA colleagues who are breastfeeding their infants, ADA and the PHCNPG are pleased to announce the availability of the "Mothers' Room" at ADA's FNCE in Philadelphia. The Mothers' Room offers a quiet, private and relaxing place for breastfeeding mothers to nurse their infants or pump breastmilk while attending FNCE. Couches, chairs, tables, a refrigerator for breastmilk storage during the day, and juice and yogurt will be available. For more information or to volunteer, contact Josefina (José) Wendel, PHCNPG Mothers' Room Coordinator at jmwendel@comcast.net.

(continued on p. 9)

HEN DPG Organic Farm Tour

Wednesday, October 3, 2007

7:45 am - 4:00 pm

Buses will depart at 8:00 am

We know HEN members won't want to miss harvest season in the beautiful Pennsylvania countryside, so we have prepared a fabulous, day-long organic farm tour on Wednesday, October 3, sponsored by Organic Valley Family of Farms Cooperative. Join HEN members and friends for this autumn get-away to Amish Country. Activities will include a milking parlor and milk house tour and demonstration; a pasture tour and discussion about organic grazing systems; a visit with Dr. Paul Dettloff, Organic Valley staff veterinarian about herd health and animal well-being; and discussions about the current research and health benefits of organic foods. Lunch will be provided on the farm followed by a cooking demonstration by Chef Monique Janet Hooker, author of *Cooking with the Seasons*. Chef Hooker will share her passion for organic foods and her long experience working with local and seasonal ingredients as a chef, restaurateur and educator. Coach transportation will be provided, but space is limited, so please register early by contacting Mary Jo Forbord at sustainablefarming@hcinet.net or 320-760-8732. Advanced registration is required.

HEN DPG Showcase

Monday, October 1, 2007

10:30 am to 1:00 pm

Philadelphia Convention Center

Stop by the HEN DPG Showcase to network with HEN leadership, subscribe to the *Journal of Hunger & Environmental Nutrition* and pick up the latest in HEN reports and materials. Enjoy a Pennsylvania-grown product to show your support of local agriculture.

For up-to-date 2007 FNCE information, visit www.HENdpg.org

*HEN DPG is pleased to welcome
Organic Valley Family of Farms
as a new Sponsor.*



CROPP Cooperative
One Organic Way
LaFarge, WI 54639
Phone: 888-444-6455
organic@organicvalley.coop

HEN ELECTRONIC MAILING LIST

One of the greatest benefits of HEN membership is the electronic mailing list. The EML is where you can:

- share information, news and ideas with others;
- fill (or find) a job;
- get expert help on developing or funding a project;
- contribute ideas or articles for the newsletter;
- stay in contact with HEN committees;
- learn about upcoming conferences;
- stay current on legislation involving hunger and environmental nutrition;
- monitor relevant ADA activities.



You must be a HEN member to join. To subscribe, send an email to: listproc@cornell.edu. In the message area type: SUBSCRIBE HEN-L (your first name) (your last name).

(Distilling the Facts in the "Food for Fuel" Debate continued from p. 7)

healthful foods.

Globally, international food aid will be diminished as the surplus in commodity crops is diminished or the price becomes too high for developing countries to purchase. According to Runge and Senauer,¹⁰ the price of Mexican tortillas doubled earlier this year because Mexico purchases 80% of its corn from the United States. The corn used in tortillas is actually white corn grown in Mexico, but farmers were buying white corn to feed livestock because it was less expensive than the yellow feed corn from the United States. The shortage in white corn caused the increase in tortilla prices.

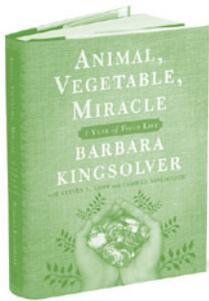
Restructuring crop patterns to accommodate fuel production is complex and has wider implications than can be presented in this brief overview. There are issues of small farmers and rural communities that benefit from economic development provided by farmer-owned cooperatives, but will they lose that competitive edge as the price of inputs rises? Will dietary patterns shift if the price of soda and snack food increases with the rise in corn and soy prices? We know the cost of the WIC

package has increased in states where food prices are higher. How will the high cost of cereal, meat, poultry and eggs affect participants' ability to purchase an adequate diet for growing infants and children? Currently the market for corn-derived ethanol is strong and the answers to these questions and others will unfold as the market responds to the demand for corn-derived ethanol.

1. H.CON.RES.25. Available at: <http://thomas.loc.gov/cgi-bin/bdquery/z?d110:hc25>. Accessed May 1, 2007.
2. American Dietetic Association. Recommendations for the 2007 Farm Bill: Investments and policies for improving the nation's food and agriculture policies. Available at: http://eatright.org/ada/files/ADA_FarmBill_Recommendations_PDF.pdf. Accessed May 1, 2007.
3. Renewable Fuels Association. Available at: www.ethanolrfa.org. Accessed on: May 1, 2007.
4. Westcott, PC. Ethanol expansion in the United States: How will the agricultural sector adjust? /FDS-07D-01/Economic Research Service/USDA. 2007. Available at: www.ers.usda.gov/Publications/FDS/2007/05May/FDS07D01/fds07D01.pdf. Accessed May 29, 2007.

5. Hoffman LA, Baker A, Foreman L, Young E. Feed grains backgrounder. Outlook Report No. FDS-07c-01. March 2007, 58 pp. USDA/ERS (FDS-07c-01).
6. Hill J, Nelson E, Tilman D, Polasky S. and Tiffany D. Environmental, economic, and energetic costs and benefits of biodiesel and ethanol biofuels. Proceedings of the National Academy of Sciences. 2006;103:11206-11210.
7. The Council for Agriculture, Science and Technology (CAST). 2006. Convergence of agriculture and energy: implications for research and policy. CAST Commentary QTA2006-3. CAST, Ames, Iowa.
8. Rosegrant MW, Msangi S, Sulser T and Valmonte-Santos R. 2006. Bioenergy and agriculture: Promises and challenges: Biofuels and the global food balance. International Food Policy Research Institute, Washington, DC.
9. USDA. ERS Briefing Room. Available at: <http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures>. Accessed May 1, 2007.
10. Runge, CF and Senauer B. How biofuels could starve the poor. Foreign Affairs. 2007;86(3):41-53.

Animal, Vegetable, Miracle: A Year of Food Life



Kingsolver, Barbara,
Hopp, Steven and
Kingsolver, Camille
HarperCollins Publishers, NY; 2007
370 pp.
\$26.95
ISBN-10:0-06-0852550

Anyone with concerns that food systems and eating habits are spinning out of control should pick up a copy of *Animal, Vegetable, Miracle* and devour it. This informative and grounding book is a great remedy for a case of “I-don’t-know-where-to-start-itis.”

Kingsolver, her husband, and two daughters spend a year eating only foods that they either raise themselves on their small farm or purchase locally. In typical Kingsolver style — her books have earned major literary awards including the National Humanities Medal in 2000 — the adventure is a pleasure to read and is simultaneously informative, humorous, touching and thought-provoking. Her passions for food, plants, creatures and her innate need to nourish herself and her

family are contagious and reassuring. “Food is the rare moral arena in which the ethical choice is generally the one more likely to make you groan with pleasure. Why resist that?” Chapters range from seasonal eating, food preservation and extension of growing seasons to food transportation, poultry raising and food rituals and traditions.

Steven Hopp, Kingsolver’s environmental scientist/bread-baker husband, presents well-referenced sidebars on fossil fuel use in food production, fair trade, local legislative efforts on food policy and more. In his last entry, “Looking for Mr. Goodvegetable,” Hopp outlines general principles for responsible eating — not only for those with time, space and knowledge to grow their own garden and not only for those with local farmers’ markets accessible year-round. He offers down-to-earth tips for the grocery store and the kitchen. “Make meal plans for the seasons, rather than starting with a recipe and having a treasure hunt for its ingredients.”

Camille Kingsolver’s essays at the close of most chapters describe college-age insights, love of food and simple but appealing recipes that could motivate even hesitant “locavores.” She contrasts her own growing up in the kitchen of a food-loving family with fears and misperceptions about food that many of her peers experience. “As far removed as most of us are from the processes of growing and preparing our food, it makes a certain kind of sense to see food as the enemy. It’s very natural to fear the unknown. Becoming familiar with the process of food production generates both respect and a greater sense

of calm about the whole idea of dinner.”

There is something for everyone in *Animal, Vegetable, Miracle*. Educators could incorporate food facts, practices and food experiences into classrooms. Parents will likely reassess their own family’s kitchen-bonding experiences as well as food selection and preparation practices. An expanded index would be useful, but I predict that readers will find themselves marking passages, folding page corners or otherwise highlighting the many simple, doable, effective and memorable concepts in this excellent book.

a sample recipe for GRILLED VEGETABLE PANINI*

Summer squash (an assortment), eggplant, onion, peppers, olive oil, rosemary, oregano, thyme, salt and pepper

Slice vegetables lengthwise into strips no thicker than ½ inch. Combine olive oil and spices (be generous with the herbs) and marinate vegetables, making sure all faces of the vegetable slices are covered. Then cook on grill until vegetables are partially blackened. You may want to use grill basket for onions and peppers.

2 loaves French bread (16 to 18 inches), 2 balls mozzarella (8 oz.), 3 large tomatoes, basil leaves

Cut loaves of bread lengthwise. Arrange bread on baking sheets and layer with slices of mozzarella first, grilled vegetables next, and slices of tomato last. Drizzle with a little bit of olive oil and place the baking sheets under a broiler until cheese is melted. Garnish with leaves of fresh basil. Cut in pieces to serve.

*One of the many recipes that can be downloaded at www.AnimalVegetableMiracle.com.

CALL FOR PAPERS

JOURNAL OF HUNGER & ENVIRONMENTAL NUTRITION™

Examining hunger and the interconnectedness among individual, political, and institutional factors that govern how people produce, procure and consume food and the implications on nutrition and health.

The Journal of Hunger & Environmental Nutrition is currently accepting manuscripts for consideration of publication. Articles must be original and



should emphasize new knowledge and discuss potential solutions or innovative practices. Manuscript submissions are accepted on a continuous basis.

Kinds of Papers:

Original Research and Research Briefs • Reports on Successful Programs, Policies, and Practices • Reviews of Current Knowledge and Research Needs • Interdisciplinary Analyses of Hunger, Environmental Nutrition, and Related Issues • Commentary on Relevant Issues and Controversies

Information about submission requirements is available at: www.HaworthPress.com/journals/IFApdfs/j477.pdf

Questions may be directed to Marie Boyle Struble, PhD, RD, Editor, at mstruble@smcme.edu.

The Challenges and Rewards of Sourcing a Local, Organic, Sustainable Luncheon

by Lynn Mader, MBA, RD

Organizing, planning and assisting with preparation of local foods meals at community events, colleges and K-12 schools is part of my work as a local foods consultant. Although the work is a familiar routine, the challenges always vary to some degree. This year it was time to tackle working with a Marriott hotel for the Minnesota Dietetic Association's (MDA) annual meeting.

We started in December 2006 when the Executive Director and I met with the catering manager to discuss the concept. The chef had to know what foods might be available, what our standards were for local, organic and sustainable foods and which were most important. We were told it would probably cost more because any substitution from the standard raises the price.

What we really wanted, and how we defined it:

Local: Within the state of Minnesota or close border states like eastern Wisconsin or northern Iowa.

Organic: Certified Organic

Sustainable: Food Alliance Certified products with environmental and social responsibility standards

Food Sourcing Considerations and Menu Development:

Seasonality – We chose the absolute worst time of year to find local produce in Minnesota. We could have sourced local greens but the chef did not want to use them because of perceived food safety risks. Even showing information from the Department of Health fact sheets did not persuade him.

Organic – We were fortunate to be working with Organic Valley, a cooperative owned by family farmers, who offered to donate

Certified Organic products for our luncheon. They could potentially provide a whole variety of meat and dairy products. We checked www.organicvalley.com to see what was available, and decided to have chicken breast and use some dairy products that could be easily delivered to the hotel.

Sustainable – After a call to Food Alliance Midwest, www.foodalliance.org, we were on the trail for sustainably certified potatoes from a Wisconsin farm that supplies potatoes to many conventional distributors.

Local – How could we showcase a Minnesota product at this time of year? We decided on a cookie for dessert, using local organic flour from Dry Weather Creek farm, grown and milled in western MN, and baked by a hometown baker. The farm and the baker are part of the Pride of the Prairie local foods network (www.localfoods.umn.edu and www.prideoftheprairie.org).

Cost – Our original cost estimate, using the products we had sourced and organic vegetables and bread, was almost double a conventional menu offering. We had to negotiate and compromise. We agreed to use conventional bread and learned that just because items are donated it doesn't mean it is free of charge. Ultimately the hotel used our donated and locally sourced products and provided organic salad and vegetables at a plate price \$3.00 higher than a conventional meal. Not bad!

On April 27th, 2007, we sat down to the first Local, Organic, and Sustainable luncheon that MDA and the Marriott has offered. It was a learning curve for all of us, but that was part of the reason for doing it. Dive in...you can do it, too!

HEN NEWSLETTER DEADLINES AND SUBMISSION GUIDELINES

Submission Guidelines: The HEN Newsletter features viewpoints, statements and articles that provide perspective on domestic and international food security, food production and environmental food issues. We also publish descriptions of programs, community intervention, research, legislation, websites or curriculums of interest to our members. We especially seek submissions from our members. These viewpoints, statements and other information do not imply endorsement by HEN and the American Dietetic Association. Articles may be reproduced for education materials only. HEN Newsletter owns the copyright of all published materials unless prior agreement was made.

Submission Deadlines

Fall 2007 –
August 15, 2007

Winter 2007/08 –
November 15, 2007

Spring 2008 –
February 15, 2008

For more specific guidelines on article format, length, referencing and additional information that must accompany articles, see the HEN Web site – www.hendpg.com. Click on Members Area, enter your Member Number, click on Member Newsletter, click on DPG Newsletter Deadlines and Submission guidelines.

HEN IS WINNER OF DPG MEMBERSHIP CHALLENGE

In March 2007, HEN received the DPG Membership Challenge Award for small DPGs. We earned this honor from having the largest increase in DPG membership for a DPG under 1000 members. The award came with a \$1000 grant from ADA to use as we please and three free full memberships to ADA. The Executive Committee will determine how to use the grant to enhance membership efforts this coming year. The free memberships went to three graduating students who show leadership potential in the areas that promote HEN's mission,

vision and goals. The recipients are Rosalie Pierce, a college student in Minnesota who has been working on sustainable agriculture issues with Mary Jo Forbord, Ashley Jacobs, a graduating senior from Tuskegee University who is starting a dietetic internship in the fall, and Cheryl Taylor, a recent graduate from the University of New Hampshire who works as a volunteer in the Operation Frontline Program at the New Hampshire Food Bank. We extend our congratulations to them and look forward to their future commitment to leadership.



calendar of events

2007 National Extension Association of Family and Consumer Sciences Annual Meeting

17-20 September 2007, Crowne Plaza St. Paul Riverfront & City Centre Hotels, St. Paul, MN
<http://www.neafcs.org/content.asp?pageID=1195>

30th Annual National Food Policy Conference

27-28 September 2007, Westin Washington DC City Center, Washington DC
<http://www.consumerfed.org/>

ADA Food & Nutrition Conference & Expo

28 September – 2 October 2007, Pennsylvania Convention Center, Philadelphia, PA.
<http://www.eatright.org/fnce>

California Foundation for Agriculture in the Classroom Annual Conference

12-14 October 2007, Asilomar Conference Grounds, Pacific Grove, CA
<http://www.cfaic.org/Conference/>

American Association of Food Stamp Directors 2007 Annual Conference

14-17 October 2007, Portland, OR
http://foodstamp.aphsa.org/Page_67.html

24th Annual World Food Day Teleconference

16 October 2007, 12-3PM EST
<http://www.worldfooddayusa.org/>

Leopold Center for Sustainable Agriculture Lecture: Climate Change, Sustainable Agriculture, and Human Nutrition

22 October 2007, 7PM, Leopold Center, Ames, IA
<http://www.leopold.iastate.edu/news/events.htm>

Field to Plate Fall 2007 International Exchange Forum: Honoring the Age of Dignity

28 October – 3 November 2007, Vaison la Romaine, Provence - France
http://www.fieldtoplate.com/france_fall_07.php

Food, Nutrition, Physical Activity and the Prevention of Cancer – A Global Perspective

1-2 November 2007, Capital Hilton Hotel, Washington, DC.
<http://www.aicr.org>

American Public Health Association 134th Annual Meeting and Exposition

3-7 November 2007, The Washington Convention Center, Washington, DC.
<http://www.apha.org/meetings>

2007 Community Food Security Coalition Annual Meeting

11-12 November 2007, Location TBD
<http://www.foodsecurity.org/events.html>

For more listings, visit: http://dnrc.nih.gov/dnrc/calendar_new.asp

2007-2008 executive committee & officers

CHAIR

Mary Jo Forbord, RD
(320) 760-8732
sustainablefarming@hcinet.net

PAST CHAIR

Helen Costello, MS, RD, LD
(603) 224-9298
hcostell@comcast.net

CHAIR-ELECT

Kim Prendergast, RD
(978) 405-9431
Kim@theprendergasts.com

SECRETARY

Christina Dyer, MS, RD
(212) 251-4117
cdyer@uwnyc.org

TREASURER

Theresa Geldard, RD, CDN
(315) 857-7391
tgeldard@twcny.rr.com

NEWSLETTER CO-EDITORS

Teri Underwood, MS, RD, CD
diethelp@msn.com
(435) 940-1161

Tamara Vitale, MS, RD, CD
(435) 797-3467
tvitale@cc.usu.edu

LEGISLATION & PUBLIC POLICY CHAIR

Nancy Becker, MS, RD, LD
(503) 422-2482
beckreck@europa.com

CPEU CHAIR

Michelle Voelker, RD
(515) 279-9283
rvoelker1@mchsi.com

NOMINATIONS & AWARDS CHAIR

Carly Gustafson, MS, RD, CD
(414) 266-4881
gustafsoncd@hotmail.com

NOMINATION & AWARDS CHAIR-ELECT

Anne Patterson, RD, LDN

MEMBERSHIP CHAIR

Caroline Baum Webber, PhD, RD
(269) 343-4719
cbw22@cornell.edu

STUDENT MEMBERSHIP

Lorna Power
(718) 261-3184
lpower@hunter.cuny.edu

Erin Feld
feldee@ihs.org

SUSTAINABLE FOOD SYSTEMS CHAIR

Alison Harmon, PhD, RD
(406) 994-6338
harmon@montana.edu

DOMESTIC HUNGER CO-CHAIRS

Kaitlin Hammond, RD
(214) 347-9608
Kaitlin@NTFB.org

Amy Lopez, RD
(214) 347-9583
Amy@NTFB.org

WORLD HUNGER CHAIR

Kelly Horton, MS, RD, CD
(206) 818-3022
kelly.horton@connectnutrition.com

WEB SITE

Michelle Voelker, RD
(515) 279-9283
rvoelker1@mchsi.com

ELECTRONIC MAILING LIST

Caroline Baum Webber, PhD, RD
(269) 343-4719
cbw22@cornell.edu

NETWORKS & ALLIANCES

Barbara Hartman, MS, RD, LD
(304) 263-0811 x3101
barbara.hartman@med.va.gov

JOURNAL OF HUNGER AND ENVIRONMENTAL NUTRITION LIAISON

Angie Tagtow
(515) 367-5200
angie.tagtow@mac.com

PROFESSIONAL ISSUES DELEGATE

Keecha Harris, DrPH, RD
001.205.678.3120
keecha@uab.edu

ADA PRACTICE TEAM MANAGER

Danielle Bauer
(800) 877-1600 ext 4778
dbauer@eatright.org

This newsletter is printed on recycled paper.



Teri Underwood, RD, MS, CD
Newsletter Co-Editor
9475 N Silver Creek Rd
Park City, UT 84098