The Hunger-Environmental Nutrition Connection

Introducing HEN's
Connecting Sustainability to Food Security Taskforce

Teri Underwood, RD, MS, CD
Caroline Webber, RD, PhD
HEN basics: Who are we and where did we come from?

Questions we ask and are asked:

• How is hunger connected to the environment?

• What role(s) can/do RDs play in bridging hunger and environmental nutrition?
Objectives of Presentation

- To explore how agriculture and the food system are associated with food security (hunger) obesity, and the environment.
- To describe how environmental, economic and societal issues contribute to food security.
- To help listeners understand how a sustainable food system (SFS) and food security are related.
- To explore emerging roles for food and nutrition professionals that bridge SFS and food security.
- To describe HEN member projects that bridge sustainable food systems and food security.
HEN Mission
Empower members to be leaders in sustainable and accessible food and water systems.

HEN Vision
HEN members optimize the nation's health by promoting access to nutritious food and clean water from a secure and sustainable food system.

www.hendpg.org
Terms: Hunger & Food Insecurity

- **Hunger**: “The uneasy or painful sensation caused by a lack of food...”*

- **Food insecurity**: “Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”*

  - Both have potential to lead to malnutrition

- **“malnourished” vs. “undernourished”**

Terms: Food security

- Food security: “Access at all times by all people to adequate amounts of safe, nutritious and culturally acceptable food for an active and healthy life” and the assured ability to acquire acceptable foods in socially acceptable ways.*

Terms: Environment

- External surroundings, include natural, built, social
- Biodiversity: The variety of life—its ecosystems, species, populations, and genetic pools.
- Natural environment is bounded, has limits
- Natural environment interaction with our species is dynamic, one influences the other
• The system is comprised of all the entities and activities related to our food supply including agricultural production, food processing, distribution, retail (marketing), consumption, and waste.
What is a food system?

Food systems & food security working conceptual model

- Recycling & composting (waste management)
- Production (Farming, Fishing, wild foods)
- Processing (Transformation)
- Distribution (Transport, Warehouse, Wholesale)
- Use (Consumption)
- Access (Retail, Food Safety Net)
Global Disparity in Calories

- 1.02 billion chronically hungry
- 1 child dies every 5 seconds, 6 million per year
- 2.7 billion live on <$2 per day

- >1 billion are obese

World population growing rapidly.
Climate Change

- Reduction in crop yield,
  - 10% for every one degree F rise
  - 20% by 2050
- More pests
- More weeds
- Less water
- More storms
- More droughts
• 50% more food needed in next 20 years.
• How to provide a nutritious diet for ALL:
  - without destroying the environment?
  - with natural resource decline and climate change?

- What does the food system look like today?
- How does it affect human health?
- The environment?
- Food security?
- Is it sustainable?
What is sustainability?

….. meets the needs of the present without compromising the ability of future generations to meet their needs.

Source: World Commission on Environment and Development
Corn and soy prominent U.S. crops

- ½ of the major crops grown in the US are soy and corn
- 85% of all soy and corn planted are genetically modified
- Tax subsidized
- 80% of corn fed to animals

www.epa.gov/oecaagct/ag101/cropmajor.html
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Factories convert soy and corn to oil, meal, starch, and high fructose corn syrup for use in processed and fast foods.
Who Controls our Food?

- 4 firms -- 80% of beef packing market
- 5 -- majority of world’s seed
- 2 -- 69% of U.S. milk
- 5 -- 46% of U.S. grocery sales

Source: http://css.snre.umich.edu/css_doc/CSS01-06.pdf
Marketing to children is big business

- Soft drink industry, breakfast foods, spend over $1 billion marketing directly to kids
Dramatic rise in Type 2 diabetes in U.S. kids

• 1/3rd of U.S. kids overweight or obese, tripled since 1980
• 1 out of 3 babies born in 2000 will develop diabetes
• If trends continue, we may see the first generation that will have a shorter life expectancy than their parents
Conventional Agriculture

- Monocultures
- Pesticides
- Synthetic fertilizer
- Groundwater pumping
- Intensive soil tillage
- Heavy machinery
- Fossil-fuel dependent
- Genetically modified seed
Pesticides

- In 2007 > 675 million pounds used in U.S.
- Toxicity never tested on humans
- Made from non-renewable resources
- Water pollution

“Pesticides, by design, are poison” Sandra Steingraber
Soil Loss

“A nation that destroys its soils destroys itself”
Franklin Roosevelt, U.S. President 1937

• Soil salinity and erosion
  • 1.7 billion tons annual loss in United States (1)
    - Pesticide/fertilizer application
    - Excessive tilling, irrigation
    - Heavy equipment
    - Livestock overgrazing

• U.S. agriculture (irrigation) consumes 80% of the water
• Produces 70% of the water pollution in U.S. rivers and streams
• Extraction of ground water and falling water tables
• Fertilizer use and water quality

source: http://www.ers.usda.gov/Briefing/WaterUse/
What is Biodiversity?

• The variety of life—its ecosystems, species, populations, and genes.

• We are losing:
  - Ecosystems, habitats (think of forests)
    • Ecosystem services
  - Genetic diversity within species
  - Species (extinction)

The Living Planet Index is an indicator of the state of the world’s biodiversity: it measures trends in populations of vertebrate species living in terrestrial, freshwater, and marine ecosystems.

Source: WWF, UNEP-WCMC
Agricultural Diversity Lost

- Losing genetic diversity of food
- 70% of food supply from 12 plant and 5 animal species
- This is important because we need the diversity to adapt to climate change
- Decreases nutrient quality of diet
HOW DOES THE FOOD SYSTEM AFFECT GLOBAL FOOD SECURITY?

ARE THERE ANY TIES?
Global Food Crisis

• 100,000,000 propelled into hunger
• Riots in 30 countries
• Social unrest
What caused the food crisis?

- Globalization
- Diversion of grain to biofuels
- Reduced harvests from prolonged droughts
- Falling world wide grain reserves
- Increased cost of oil, fertilizer, pesticides
Globalization of the food economy

- Establishment of World Trade Organization
  - commenced on January 1, 1995
  - replaced the General Agreements on Tariffs and Trade (GATT), which commenced in 1947
  - deregulation to promote free markets
  - elimination of tariffs
  - allowed agribusiness competitive advantage
Agricultural Dumping

• Agribusiness corporations sell U.S. grain at less than production price
• Tax subsidized by American government
• Economies of scale
• Farmers can not compete, go out of business
World meat production (1950-2006)

In 2006, farmers produced **276 million tons** of meat
- Five times as much as in the 1950s

Source: World Watch Institute, 2008
Resource use for one burger

- 12 pounds of grain
- 2500 gallons of water
- 55 square feet of rainforest

Note: these statistics do not apply to 100% grass fed animals
1. Increase food (50% in 20 years)
2. Provide a culturally appropriate, nutritious diet that is healthy and ensure adequate distribution/access for all
3. To do this without devastating:
   • The environment
   • The livelihoods of small farmers, indigenous people and communities
Agro-ecology

- Whole system approach
- Balances ecology, social equity, economic viability
- Considers local and global community
- Indefinitely in time
- Extended to all living organisms
- Maintains natural resource base
- Minimal artificial inputs

http://www.agroecology.org/
Benefits of Local and Regional Food Systems

• Promotes food security
• Improves local economy
• Preserves farm land and farm skills
• Fresher foods; nutritious diets
• Promotes sustainable farming
• Saves resources
Urban Agriculture

• Growing, processing, and distributing food in and around cities

• Community gardens

• School gardens

• Commercial gardens
What is a Community Food System

Community food security is
“…a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice” (Hamm and Bellows, 2003, p. 37)

Community food system is
“…one in which sustainable food production, processing, distribution and consumption are integrated to enhance the environmental, economic, and social and nutritional health of a particular place.” (Garrett and Feenstra, 1999, p. 2)
Components of CFS

http://vancouver.ca/ctyclerk/cclerk/20031209/rr1-2.gif
GETTING STARTED

Contemplative Stage: Educate yourself! Get inspired!

- Join HEN DPG
- HEN Post and other materials
- Join HEN list serv to learn what others are saying and doing
- ADA position papers
- Be a concerned, informed citizen - recognize that our food choices matter.
  - Newspapers, electronic media
Getting Started

Preparation Stage - Get the lay of the land:
• Talk with your colleagues and clients
• Visit community food system sites near you (farmers markets, co-ops, food banks, etc.)
• Increase your involvement in civic organization(s) with similar values, interests
• Consider opportunities at work, in your community
• Get involved in a HEN committee
• Network in and out of our profession
Bridging Hunger-Environment Divide

• Action - Stage 1 (existing food systems):
  - Get involved in strategies and activities that create small but significant changes to existing food systems

• Action - Stage 2 (transitioning food systems):
  - Initiate new activities or create environments that encourage establishment of new systems

• Action - Stage 3 (redesigning food systems for sustainability):
  - Advocacy, participation in creation of public policy in order to redesign food systems for sustainability.

Civic Dietetics

Concept of civic dietetics:

• “The promotion - through dietetic practice in community nutrition, education, research, consulting or clinical nutrition - of a sustainable, just, economically viable, community-based food system.” (Wilkins 2004.)

• Includes using our expertise to:
  - Evaluate food based on their contributions to health & sustainability
  - Critically assess our food & agriculture system
  - Include environmental, social, economic and justice issues as legitimate to dietetic practice.
Some HEN Member Paths:

- Clinical RDs and hospital food service manager RDs: Healthcare Without Harm and green hospital movement
- Public health, community nutritionists - community gardens, farmers markets, food bank, farm-to-school, WIC and SNAP-ED opportunities
- Journalists, professional speakers, and authors - print, radio
- Culinary instructors using sustainable foods, cooking instructors
- Educators - children, college/university, adults, in community and as clients
- Farmers, gardeners
- Bloggers: My Kitchen Nutrition, Food Sleuth, Epicurean Ideal, and others
- Permaculture specialists
- Entrepreneurs
- Professional planners
- ADA policy and communications consultant, lawyer
- Activists - policy enablers, influencers and activists-in-training; NGOs
Sample HEN RD Projects

• RD working with Refugee Health Program, Chicago, IL
  - Rogers Park Community Garden partnered w/Loyola U. students, neighborhood, refugees.
  - Culturally appropriate garden workshops
  - Community garden harvest shared with local food pantry

• Radio talk host and investigative nutritionist

• Teaching non-nutrition students to think creatively and critically about our food system, relation to environment, industry, policy.

• Nutritionist, United Way of NY
  - “Local Produce Link” for food insecure people. United Way contracts w/local (NY) farmers through Just Food; uses NYS HPNAP funds, food pantries
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