Where Are the Critical Points in the Food System for Improving Public Health?

Definition of a Healthy Diet

One that supplies all the nutrients you need without providing toxic substances and bacterial contamination at the same time.

(Roderuck, 1981)
Definition of Healthy Food

Usually fresh or minimally processed foods, naturally dense in nutrients, that when eaten in moderation and in combination with other foods, sustain growth, repair and maintain vital processes, promote longevity, reduce disease, and strengthen and maintain the body and its functions.


A healthy sustainable food system is:

– Health-promoting
– Sustainable
– Resilient
– Diverse
– Fair
– Economically balanced
– Transparent

(ADA, ANA, APA, APHA 2010; Pierce-Quiñonez, M.)
Inputs

- Hybrids with reduced nutrient levels
- Synthetic fertilizer – greenhouse gases, runoff, dead zones

Distribution

- Increased asthma incidence from exhaust
- Fossil fuel use
- Cross-contamination
Retail

• Inequity in prices
• Less access to nutrient-rich foods
• Carbon footprints

Food Service

• Portion sizes
• Emphasis on high-fat foods
• School meals
• Vending machines
Farming/Ranching

- Pesticide residues (farm workers, children)
- Antibiotic resistance
- Microbial contamination
- Obesity – no connection

Processing/Manufacturing

- Microbial contamination
- Low nutrient-density foods
- Advertising
Common Responses to Complex Problems

- Retreat
- Despair
- Believe the problem is beyond hope
- Assign blame, figure out who is responsible
- Simple solutions
- Galvanize collective efforts and invest significant resources

(Bar-Yam, Y. Making Things Work, 2004)

Solutions to Complex Problems

- Support individuals/Individuals matter
- Match complexity to capacity
- Establish networks and teams
- Set functional goals
- Distribute decision, action, and authority
- Create competition and feedback loops
- Assess effectiveness at various levels

(Bar-Yam, Y. Making Things Work, 2004)
Obesity System Causal Map

(UK government’s Foresight Programme, 2005)
Five System Levels

- **Paradigm**
  - System’s deepest beliefs
- **Goals**
  - What the system is trying to achieve
- **Structure**
  - As a whole, enhancing connections across most of the system
- **Feedback and delays**
  - Self-regulation, self-reinforcement, adaptation
- **Structural elements**
  - Subsystems, actors, and issues

(Based on Finegood, D. National Engineering Summit, May 2009)

Places to Intervene to Address Public Health Problems

- **Paradigm shift**
  - Healthy food supply requires consideration of policies across entire system
- **Goals**
  - All actors in the supply chain working to minimize negative health impacts
- **Structure**
  - Increasing coherence among actors re: programs, policies, incentives that promote more healthy food purchases
- **Feedback and delays**
  - More measurements, and more understanding of the ineffectiveness of most feedback loops
- **Structural elements**
  - Multiple things – for example, portion sizes, sidewalks

(Based on Finegood, D. National Engineering Summit, May 2009)
Implications for Partnerships

- Clear, common aim
- Trust
- Collaborative leadership
- Sensitivity to power issues
- Membership structure
- Action learning

(Best, A., and Hall, N. Rapid Review of Interorganizational Partnerships, INSOURCE, 2006)

Barriers to Building Trust

- Lack of mutual respect
- Prejudging, stereotyping, inherent bias
- Perceived differences between goals and objectives of other sectors
- Sector-specific drivers
- Inability or unwillingness to communicate
- Entrenched positions
- Lack of knowledge
- Willful misrepresentation
- Concern about reputation

(Finegood, D. Systems Thinking for Public Health, 2009)
Key Factors Common to Building Trust

- Common ground
- Shared vision, agenda
- Leadership
- Commitment
- Communication
- Accountability

(Finegood, D. Systems Thinking for Public Health, 2009)

1. Critical points for intervention
   - Multiple examples, e.g., nitrates

2. How can actors collaborate?
   - Accept the complexity of the problem
   - Agree to build trust across sectors

3. Priority research
   - What new analyses, experiences, and models are needed for this collaboration?

4. Recommendations
   - Develop food system public health maps
   - Initiate more conversations – for example, the Sustainable Food Laboratory