Global Challenges in Food Safety and Agriculture

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What we need to know about food safety:

1. How is food safety defined?
2. What are primary global concerns?
3. Where are improvements in food safety needed most?
4. Who will be affected by these improvements?
5. How is food safety controlled?
6. What is the most effective way to apply food safety principles?
7. What challenges exist in implementing safe food practices?
Food safety - a scientific discipline describing handling, preparation, and storage of food in ways that prevent foodborne illness

Major causes of foodborne illness

**Foodborne Pathogens**
- Bacteria
- Viruses
- Parasites
- Prions

**Chemical Contamination**
- Naturally occurring toxins
- Heavy metals
- Organic pollutants

**Adulteration**
- Intentional or unintentional
- Biological
- Chemical
- Physical

World Health Organization, Food Safety Fact Sheet No. 399, December, 2015
Where do food contaminants come from?

• Air
• Water
• Soil
• Storage/Packing materials
• Processing/cooking equipment
• Animals
• Food handlers
Contaminated food consumption causes over 200 diseases

What are the deadliest infectious diseases?

- HIV kills 2.6 million people per year
- The second leading cause of death rarely talked about – Diarrhea
- ~2 billion cases of diarrhea per year
- Diarrheal disease kills 2.4 million people per year
- Diarrhea is the leading cause of malnutrition in children under 5

(World Health Organization)
Where and why are 10 million children dying every year? 

The problem is not isolated to developing countries

- Asia has emerged as a major source of U.S. imports
- 70% of shrimp consumed in the U.S. is imported from Asia - 58% from India, Vietnam, China, Indonesia
- More than 40% of U.S. agricultural imports are horticultural products

Establishing food safety standards is an ongoing international effort
Governments define and regulate science-based food management systems.
Regulations are only as good as the resources available to enforce them – ultimately, individuals implement change.

Inspectors  Farmers  Food Processors  Food Preparers

Postharvest in Horticulture: Reducing losses, improving quality to capture high-value crops

July 24, Washington, D.C.

World Health Organization, Food Safety Fact Sheet No. 399, December, 2015
Effective implementation of scientifically solid principles requires consideration of wide ranging issues

- Facilities
- Infrastructure
- Transportation
- Equipment and supplies
- Post-harvest management systems
- Networks among food system actors
- Financial resources and restrictions
- Cultural norms
- Educational level
- Community dynamics

World Health Organization, Food Safety Fact Sheet No. 399, December, 2015
Understanding physical constraints

• Inadequate facilities and infrastructure such as absence or shortage of:
  • safe water
  • electricity
  • storage facilities

• Lack of cold storage and transportation

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Understanding logistical constraints

• Food production, processing, and marketing systems are highly fragmented
• Fragmentation results in many food handlers
• Poor post-harvest handling, processing and storage of food
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World Health Organization, Food Safety Fact Sheet No. 399, December, 2015
Understanding social constraints

• Many traditional production and handling practices have been effective
• Tradition can conflict with emerging intensive agricultural practices
• Can lead to an inability to cope with rapid change

World Health Organization, Food Safety Fact Sheet No. 399, December, 2015
Understanding social constraints

• How can new practices build on the extensive local experience?
• How can people be equipped to maintain new technology or practices long-term?
• What incentives can promote expansion and sustain change?
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1. The science of how to keep food safe
2. High incidence of disease with global consequences
3. Developing countries
4. Everyone!
5. Food safety standards, management practices and regulations
6. Support social change
7. Physical, logistical and social constraints
HOW SAFE IS YOUR FOOD?

Food processing  Packaging  Point of sale  Preparation: consumers

From farm to plate, make food safe

WORLD HEALTH DAY 2015
#safefood