

Management of Food Safety: How do we proceed today for the future?

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Food Safety is a Global Public Good

- 
- **Critical to food security, nutrition.**
 - **Serious public health issue.**
 - 600 million illnesses/year
 - Children bear most of burden
 - Associated with long-term health outcomes
 - **Significant economic impact.**
 - Medical costs, lost productivity
 - Loss of consumer confidence
 - Reduced market access
 - Increased food loss and waste

A Serious Public Health Issue

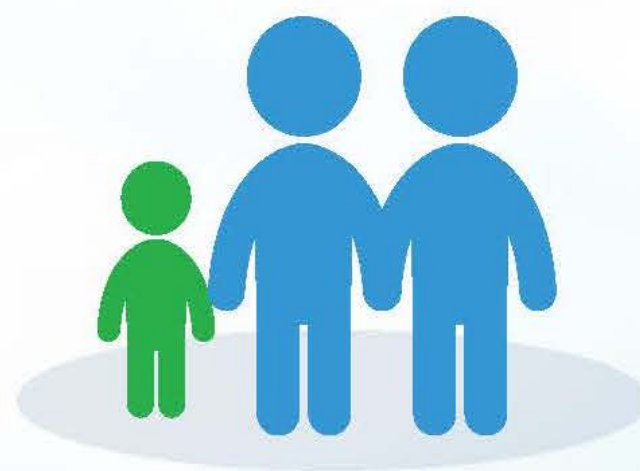
Every year foodborne diseases cause:

almost
 **in 10**
people to fall ill

33 million
 healthy life years lost

Foodborne diseases can be deadly, especially in children <5


420 000
deaths



Children account for
almost **1/3**
of deaths from
foodborne diseases

For more information: www.who.int/foodsafety

#SafeFood

Source: WHO Estimates of the Global Burden of Foodborne Diseases. 2015.



**World Health
Organization**

Long-term Health Impact

Autoimmune Disorders	Reactive Arthritis – associated with many foodborne pathogens; rates vary from 2.3% to 15%. Guillain-Barre Syndrome – <i>Campylobacter</i> is common trigger and accounts for 40% of cases in U.S.
Digestive Disorders	Irritable Bowel Syndrome – associated with many foodborne pathogens; causes estimated 17% of cases. Irritable Bowel Disease – includes Crohn's Disease, Ulcerative Colitis.
Neurological Disorders	Sepsis, Meningitis, Respiratory distress Paralysis, palsies, seizures, epilepsy Cognitive impairment, visual/hearing impairment
Renal Failure & Associated Sequelae	Hemolytic Uremic Syndrome (HUS) – severe, life-threatening illness; leading cause of acute kidney failure in children under age 5 in U.S.; associated with STEC, <i>Shigella</i> . Chronic kidney disease, End stage renal failure, Chronic hypertension, Pancreatitis, Diabetes mellitus – often secondary to HUS.
Emerging Issues	Schizophrenia, psycho-social disorders – recent studies have found increased risk for toxoplasmosis but not well understood. Urinary tract infections

Managing the Risks

The Well-Traveled Salad.

Do You Know Where Your Food Has Been?

As consumers, many of us fail to recognize that even our domestic and local food supplies are part of a global network. The daily activity of consuming food directly links our health as humans to the health of crops and produce, food animals, and the environments in which they are produced.

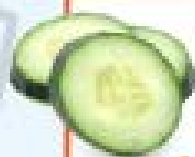
LETTUCE

Canada, Chile, Dominican Republic, Mexico, Peru, USA



CUCUMBERS

Canada, Honduras, India, Mexico, Spain, USA



FETA CHEESE

Canada, Denmark, Egypt, Germany, Greece, Israel, Italy, Turkey, UK, USA



VINAIGRETTE

Argentina, Brazil, Canada, Chile, China, France, Germany, Greece, India, Indonesia, Italy, Mexico, Morocco, Peru, Portugal, Spain, Thailand, Tunisia, Turkey, USA, Vietnam



OLIVES

Greece, Israel, Mexico, Spain, USA



SPROUTS

Argentina, Australia, Bangladesh, Canada, China, Egypt, France, India, Morocco, Nepal, Pakistan, South Africa, Spain, Turkey, USA



CROUTONS

Argentina, Australia, Brazil, Canada, China, France, India, Mexico, Netherlands, Poland, Russia, Switzerland, Uruguay, USA, Vietnam



TOMATOES

Canada, Dominican Republic, Holland, Israel, Italy, Mexico, USA



ONIONS

Canada, China, Germany, India, USA

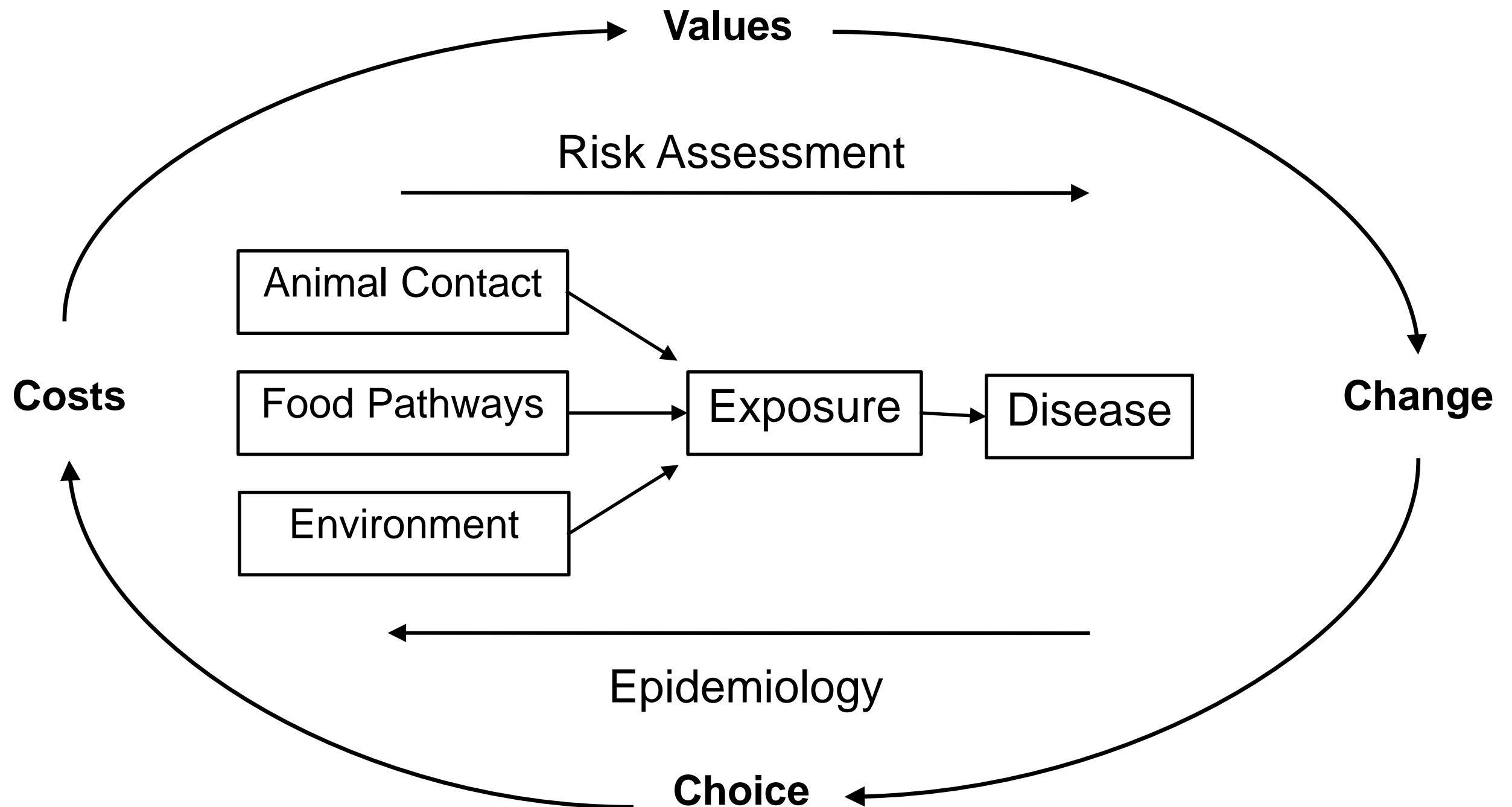


MANDARIN ORANGES

Israel, Mexico, Morocco, South Africa, Spain



An Integrated Food Safety System



Source: Modified from Havelaar AH, Braunig J, Christiansen K et al. Towards an Integrated Approach in Supporting Microbiological Food Safety Decisions. *Zoonoses Public Health* 2007; 54:103-117.

A Risk-Based Approach

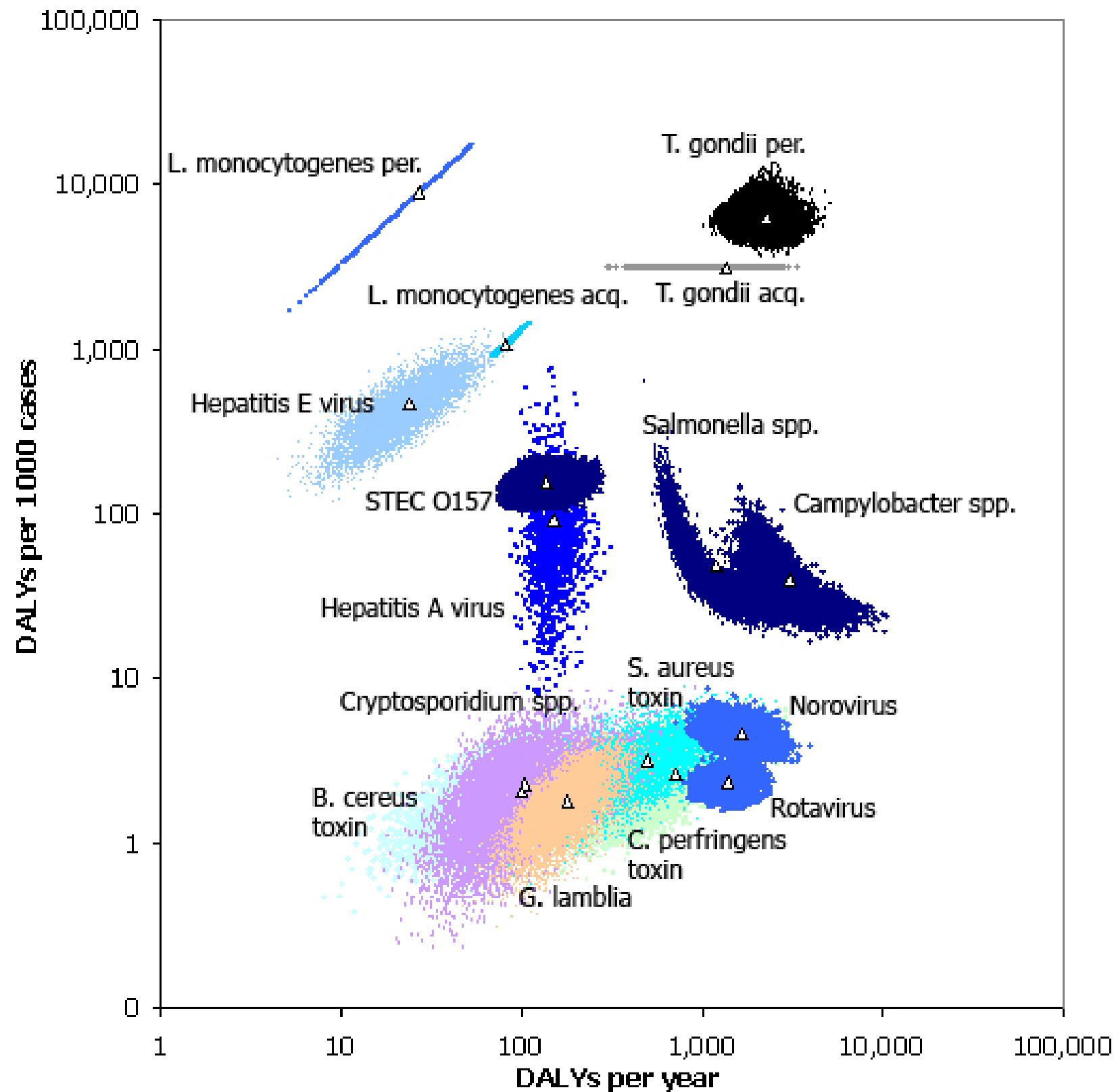
- **Proactive and data-driven**
- **Grounded in risk analysis**
- **Systematic and transparent**
- **Ranks risks based on public health impact**
- **Prioritizes allocation of resources to manage risk most effectively**
- **Considers other factors in decision-making (i.e. perception, cost, environmental/market impacts)**
- **Evaluates efficacy of risk management on continuous basis**
- **Involves all stakeholders**



Source:

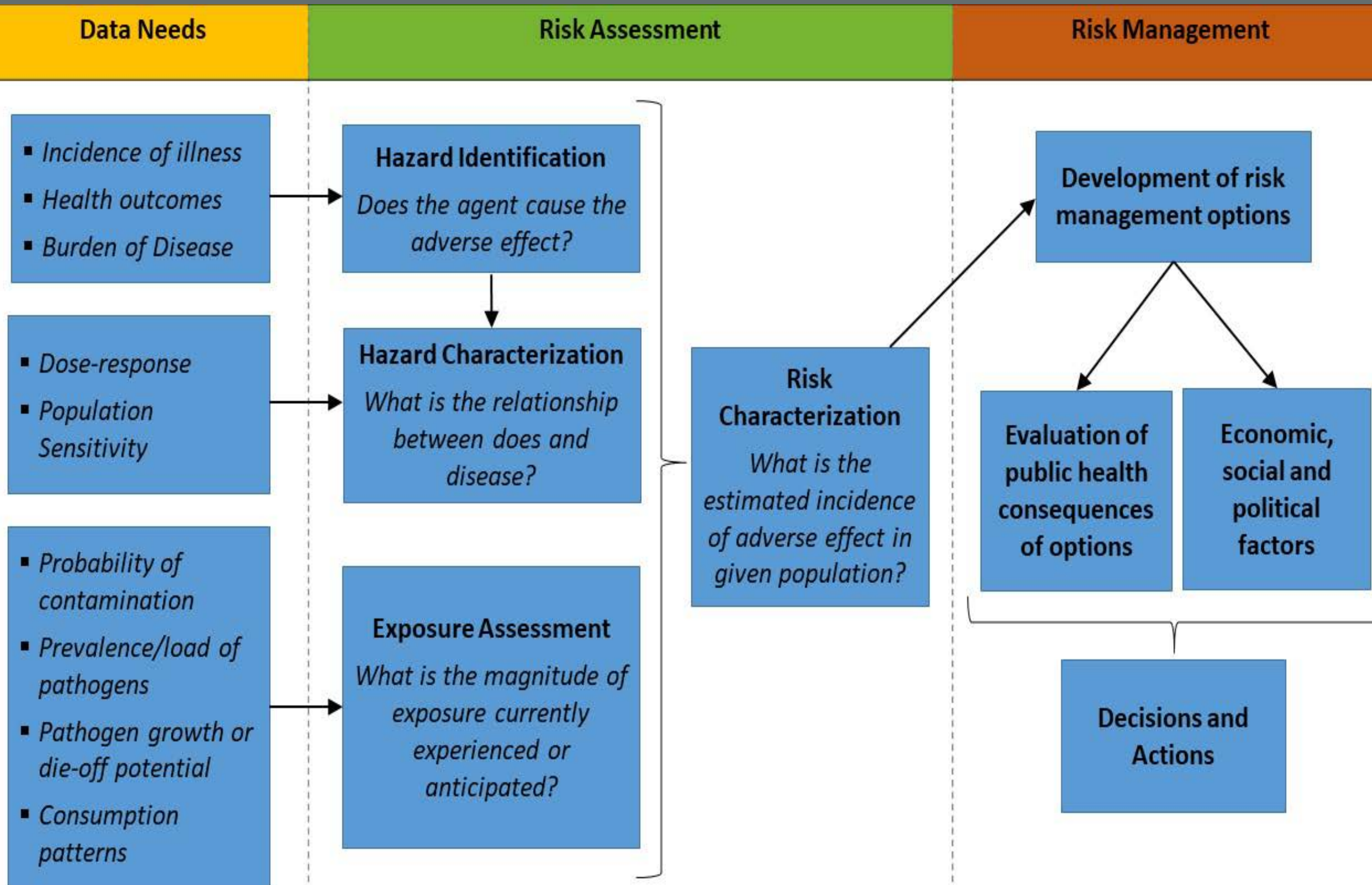
<http://www.nationalacademies.org/hmd/Reports/2010/Enhancing-Food-Safety-The-Role-of-the-Food-and-Drug-Administration.aspx>

Assessing and Ranking the Risks

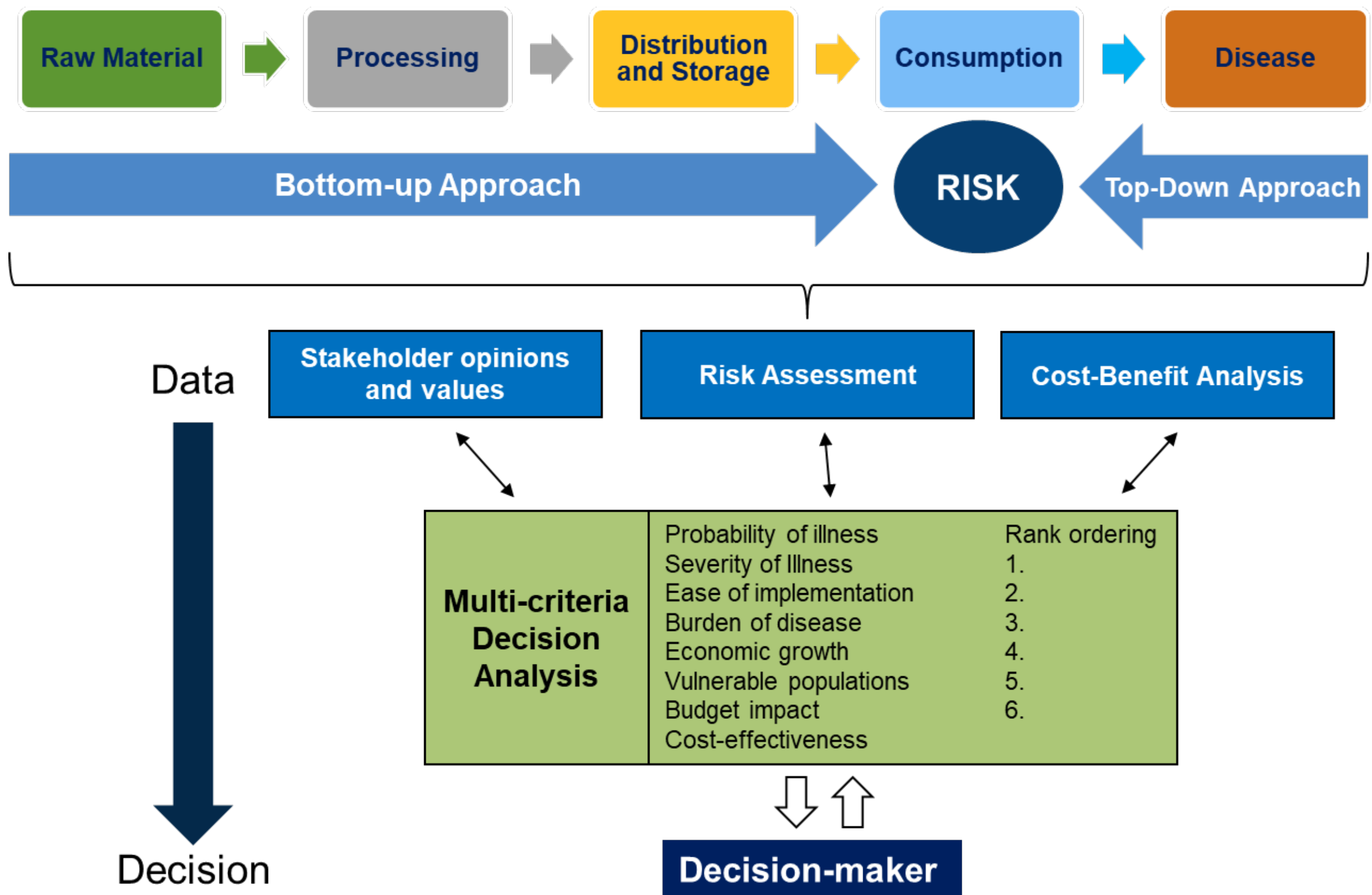


Source: Havelaar et al., Zoon Publ Health 2007;54:103-117

Estimating Public Health Impact & Cost Effectiveness



From Data to Decision



The Future of Food Safety



THE FUTURE OF FOOD SAFETY

Transforming knowledge into action for people, economies and the environment

ADDIS ABABA, 12-13 February 2019
The First FAO/WHO/AU International Food Safety Conference

GENEVA, 23-24 April 2019
The FAO/WHO/WTO International Forum on Food Safety and Trade

With an estimated 600 million cases of foodborne illnesses annually, unsafe food is a threat to human health and economies, disproportionately affecting vulnerable and marginalized people, especially women and children, populations affected by conflict and migrants.

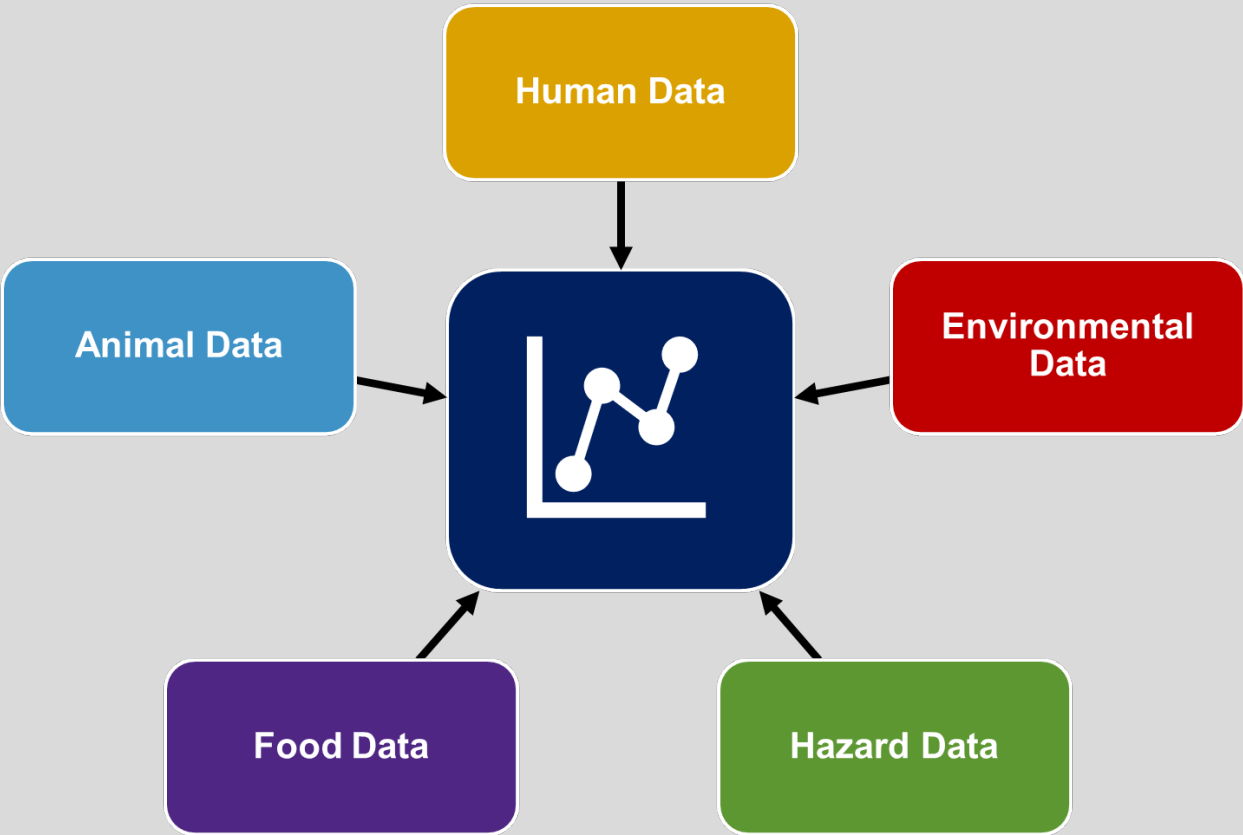
Ongoing changes in climate, global food production and supply systems affect consumers, industry and the planet itself. These changes can have an impact on food safety systems and pose sustainability and development challenges. This is a pivotal moment demanding urgent reflection on actions needed to bolster food safety -the impetus for the two international meetings.

At the **Addis Ababa Conference**, priorities will be discussed so that food safety strategies and approaches can be aligned across sectors and borders, reinforcing efforts to reach the Sustainable

Development Goals and supporting the UN Decade of Action on Nutrition.

The **Geneva Forum** will address the trade-related aspects and challenges of food safety.

The two meetings will result in a high-level political statement advocating for increased and better coordinated collaboration and support to improve food safety globally.



Our Destination



An integrated, holistic, systems approach to food...

- **proactive, preventive and anticipatory;**
- **addresses human, animal and environmental health needs (One Health); and**
- **delivers sufficient, safe and nutritious food to all.**

Questions?



**“As for the future,
your task is not to foresee it,
but to enable it.”**

- Antoine de Saint-Exupery
French Writer, 1900-1944

Thank You!

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www.foodsafety.osu.edu

- Guiseppe Arcimboldo