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[EXAMINE]

# FOOD SAFETY ISSUES AND TRENDS AROUND THE GLOBE

DAIRY FORUM 2018

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Vice President

Cargill Corporate Food Safety,
Quality and Regulatory

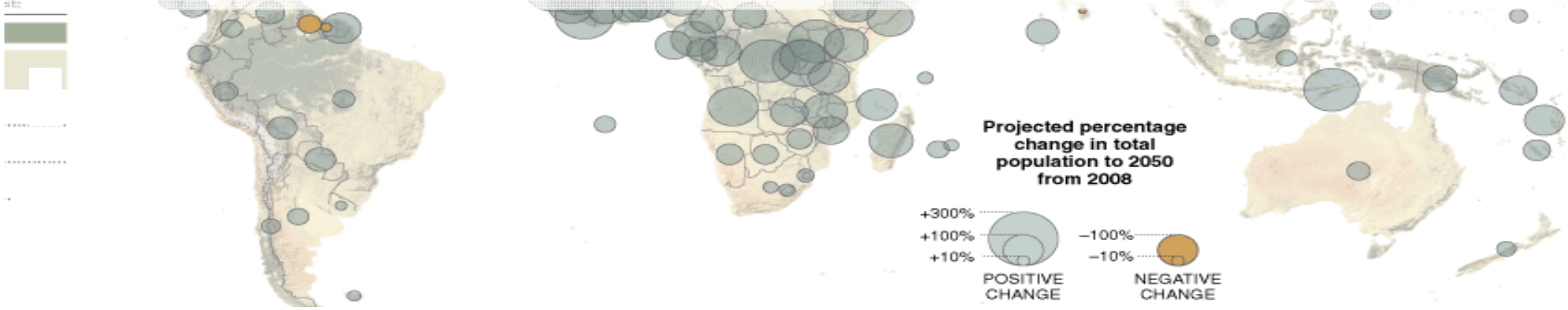
IDFA
INTERNATIONAL
DAIRY FOODS
ASSOCIATION

# Defining the global situation

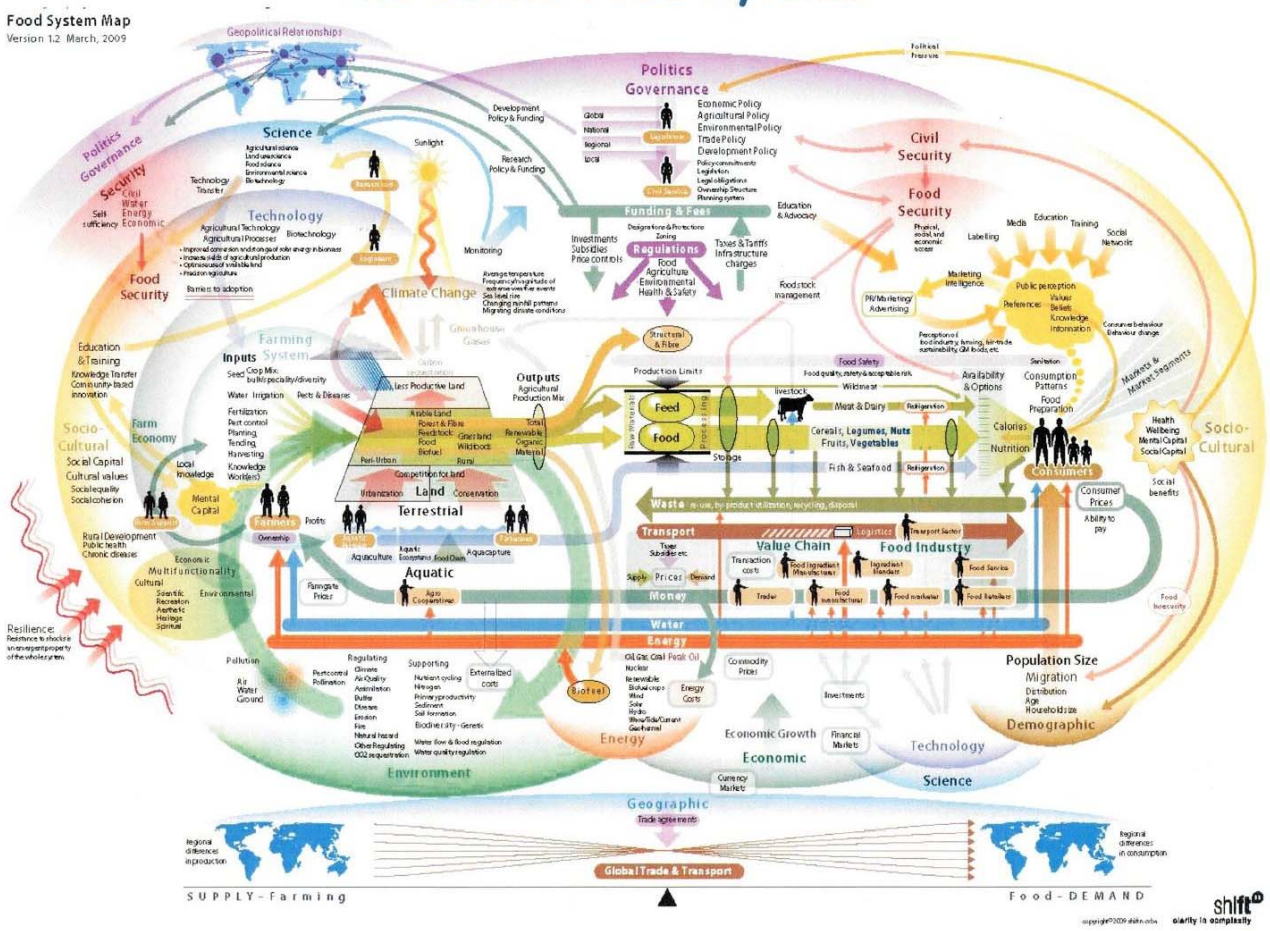
- Changing Global Dynamics
- Free Markets
- Direct Foreign Investment
- Emerging Countries in the Global Economy
- Global Trade Brings Global Food Safety Issues
- Global to Local Food Safety approach needed

# Food safety challenges

- **Global population** is expected to increase to over 9 billion by 2050 from the current 7 billion.
- **Global food supply** will need to double or triple on a planet with limited farmland, fresh water
- **Global food system** is more complex than ever before.

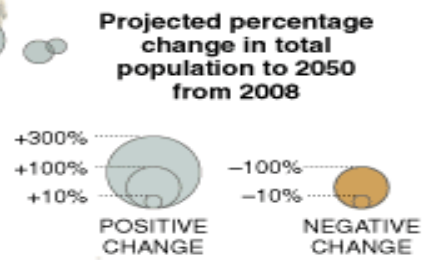


# The Global Food System



# Food safety Food safety challenges cont.

- **Disease detection** is becoming more sophisticated.
- **New pathogens** are emerging
- **Immuno-compromised** population is growing.
- **Social media** is opening new ways of communication
- **Economically motivated** adulteration is increasing
- And…**consumer trust** is at its worst…



# TRENDS

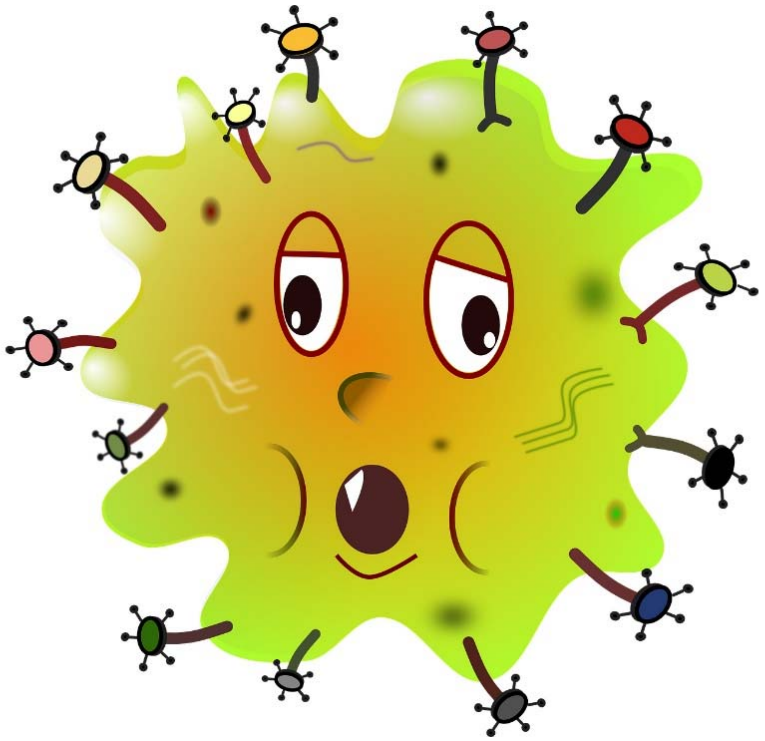
- Regulatory Changes
- Trade Challenges
- Consumer Expectations

# New Technology

- WGS – NGS
- CRISPR
- Analytical Chemistry
  - Zero Gets Smaller

# Current Issues

- Nutrition and Food Safe
- Microbial Threat
  - AMR
  - Listeria
- Hazard vs Risk
- Food Fraud



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# Risk and Reward:

## Food Safety and NAFTA 2.0

by Rory McAlpine and Mike Robach

SEPTEMBER 2017

CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

Wilson Center
CANADA INSTITUTE

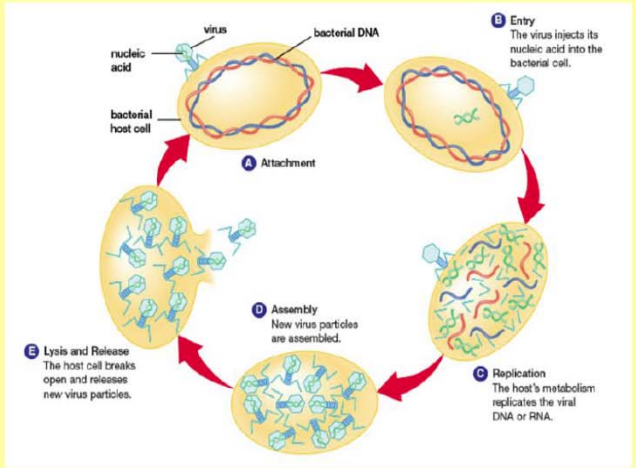
# Solutions

- Targeted Technology
  - Microbiome
    - Blockchain
      - Data Analytics

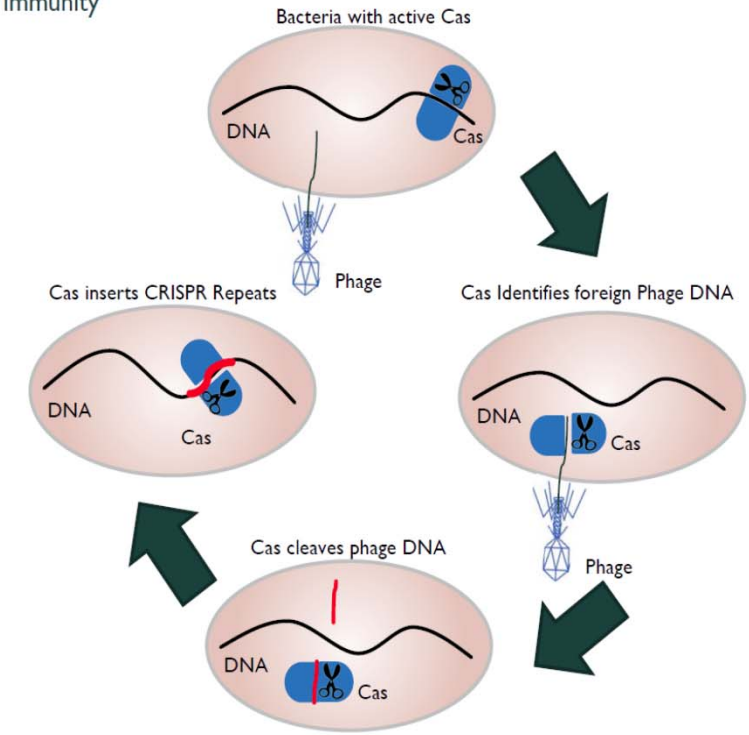
## BACTERIOPHAGE NORMALLY INFECT THE HOST AND REPLICATE THROUGH THE LYTIC CYCLE, UNLESS THE BACTERIA CAS IDENTIFIES AND EVOLVES ITS OWN DNA TO CREATE RESISTANCE

Bacteriophage winning the battle against bacteria

### Lytic Cycle

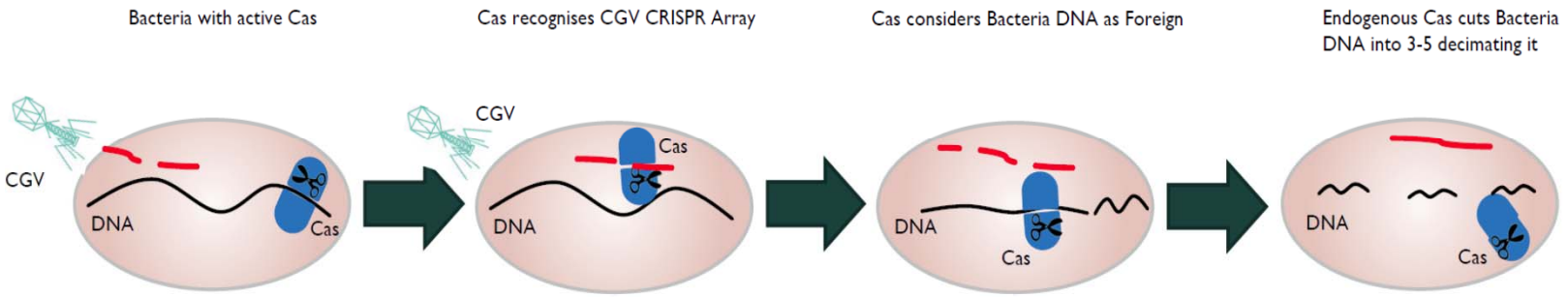



Bacteria winning the battle against the Phage and creating adapted immunity



## CGVS ARE VECTORS THAT UTILISE THE CARRIAGE OF BACTERIOPHAGE AS A TROJAN HORSE TO INSERT RECOGNISABLE CRISPR ARRAYS WHICH PROMOTE THE CAS PROTEIN TO CLEAVE ITS OWN DNA, SO DECIMATING THE BACTERIA

### CGV's Trojan CRISPR Array hijacks the endogenous Cas to cleave it own bacteria DNA




Notes:

1. Some bacteriophage have evolved naturally to retain CRISPR array which promote Cas in the bacteria
2. And some bacteria have repressed Cas proteins
3. CGVs are not self replicating
4. It can be programmed to reform in host to perform the lytic cycle
5. Concentration and dosage required can be calculated

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CODE: XXXXXX
TEXT CODE to 1-855-899-3276 or ENTER CODE at HoneysuckleWhite.com to trace this turkey.
Fresh

# GFSI: a Global Multi-stakeholder Network

# GFSI Board of Directors

Members from major retailers, manufacturers and food service operators provide the strategic direction for ongoing and new work streams.

AEON
Ahold Delhaize
amazon
Auchan
Cargill
Carrefour
The Coca-Cola Company
中粮 COFCO
COSTCO WHOLESALE
DANONE
Dole
McDonald's
Mondelēz International
新希望 NEW HOPE
Nestlé Good Food, Good Life
TESCO
Tyson
Walmart
Wegmans

# GFSI Benchmarking Requirements

**Benchmarking Requirements**

- Endorsement of existing CPOs.
- Approval, support and authorisation of existing standards by a global body.

- Based on Codex Alimentarius
- The backbone of GFSI
- Key tool to:
  - advance food safety
  - improve efficiency
  - foster harmonization

# Global Markets Programme

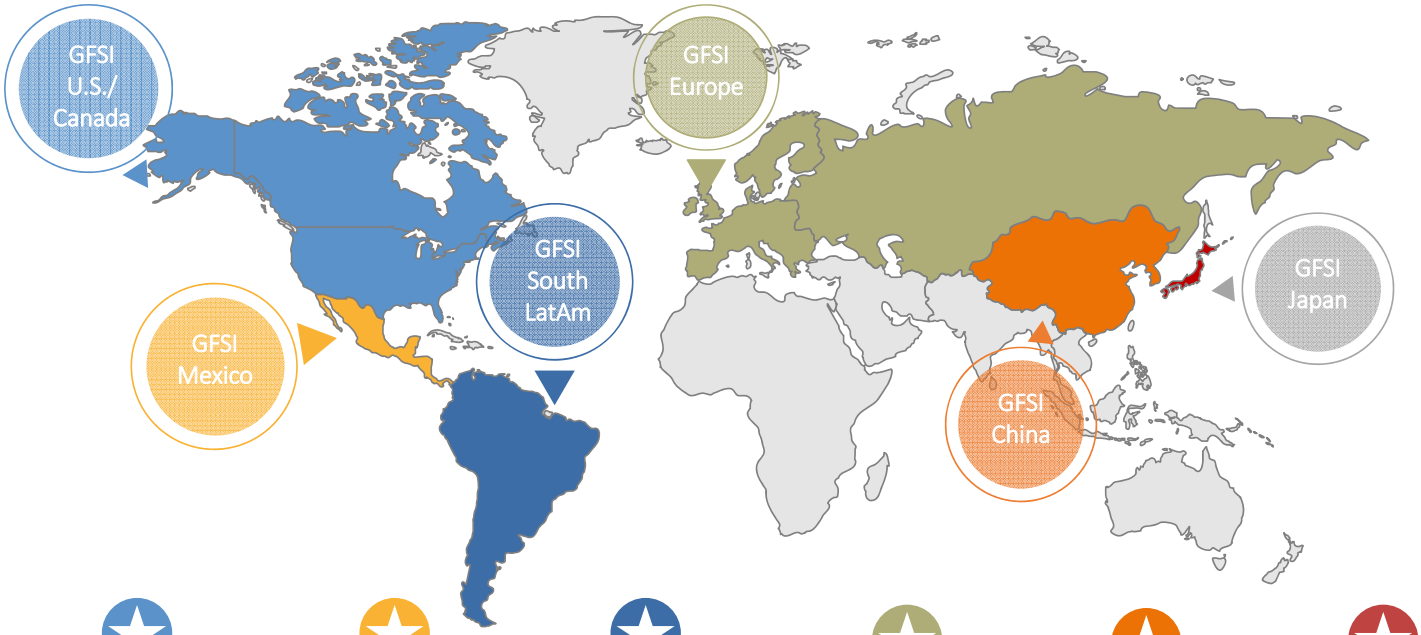
**GFSI Global Markets Programme**

Step-by-step approach to develop capacity in operations lacking mature food safety systems.

- A Roadmap to Safer Food and Market Access
- Free voluntary tool for development of supplier food safety management systems
- Supports operations in primary production and manufacturing which lack strong food safety systems
- Guidance toward certification against GFSI-recognised certification programmes.

# GFSI Local Groups

## These groups work to implement global GFSI strategy at a local level.




**GFSI U.S. Canada**
Formed in 2013

**GFSI Mexico**
Formed in 2013

**GFSI South LatAm**
Formed in 2015

**GFSI Europe**
Formed in 2016

**GFSI China**
Formed in 2013

**GFSI Japan**
Formed in 2012

# Partnering with Government Food Safety Regulators

- Dialogue and participation in joint programs

- Contributes to the global harmonization of Food Safety

| | |
|---|---|
| Canada | Japan |
| Mexico | China |
| Argentina | France |
| Chile | UK |
| USA | Netherlands |

Opportunity

to leverage our

collective resources to realize

**Safe Food**

for consumers everywhere

Questions?

[EXAMINE]

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