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Pan American Health Organization

*Regional Office of the
World Health Organization*



Capacity Building on Food Safety: Focusing on Education and Social Communication

Genaro García

Regional Food Safety Adviser (PAHO/WHO)

Veterinary Public Health Unit

Disease Prevention and Control

**Agriculture Outlook Forum 2005:
Science Policy & Markets – What's Ahead ?
Arlington, Virginia 24 – 25 February 2005**

Veterinary Public Health Unit

**Food Safety Program
Headquarter**

INPPAZ

Field Staff

Network

**10 WHO/PAHO
Collaborating Centers**

COPAIA

RIMSA

Pan American Institute for Food Safety



MANDATES

REGIONAL

- PAHO/WHO Directing Council Resolutions.
- Inter-American Meeting on Health and Agriculture (RIMSA)
- Pan American Commission on Food Safety (COPAIA)

GLOBAL

- World Health Assembly Resolutions
- Codex Alimentarius Commission
- International Health Regulations

PAHO and USDA Sign Agreement on Food Systems Capacity Building

Washington, June 24, 2004 (PAHO)—

- food systems capacity building.
- Cooperation to improve protection of the food supply and Livestock & agriculture from intentional and accidental introduction of harmful substances and exotic disease, as well as other joint activities.



• PAHO Director, Dr. Mirta Roses (left), and Dr. Elsa A. Murano, from the USDA.
• (Photo: Armando Waak/PAHO)

EPIDEMIOLOGICAL ASPECTS



- **1.5 billion diarrhea cases worldwide per year**
- **3 million deaths in children under the age of 5 years old**



Source : WHO

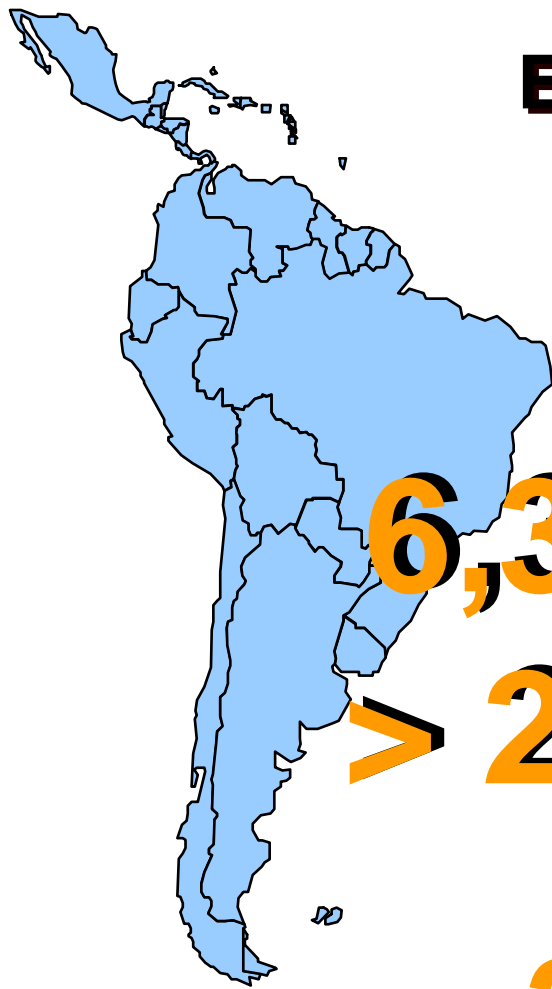
EPIDEMIOLOGICAL ASPECTS

1995-2003

6,332 outbreaks

> 230,141 cases

317 Deaths



Some FBD's Outbreaks in the Caribbean

- Major cause of economic burden, illness & death
- 1990-98: 63 outbreaks: 33 viral, 23 bacteria
- 48% were FBD due to *Salmonella* (mainly SE)
- Multiple based hotel FBD outbreaks
- 2002: 4 hotels, 10 cruise ships FBD outbreaks



FBD in the Caribbean

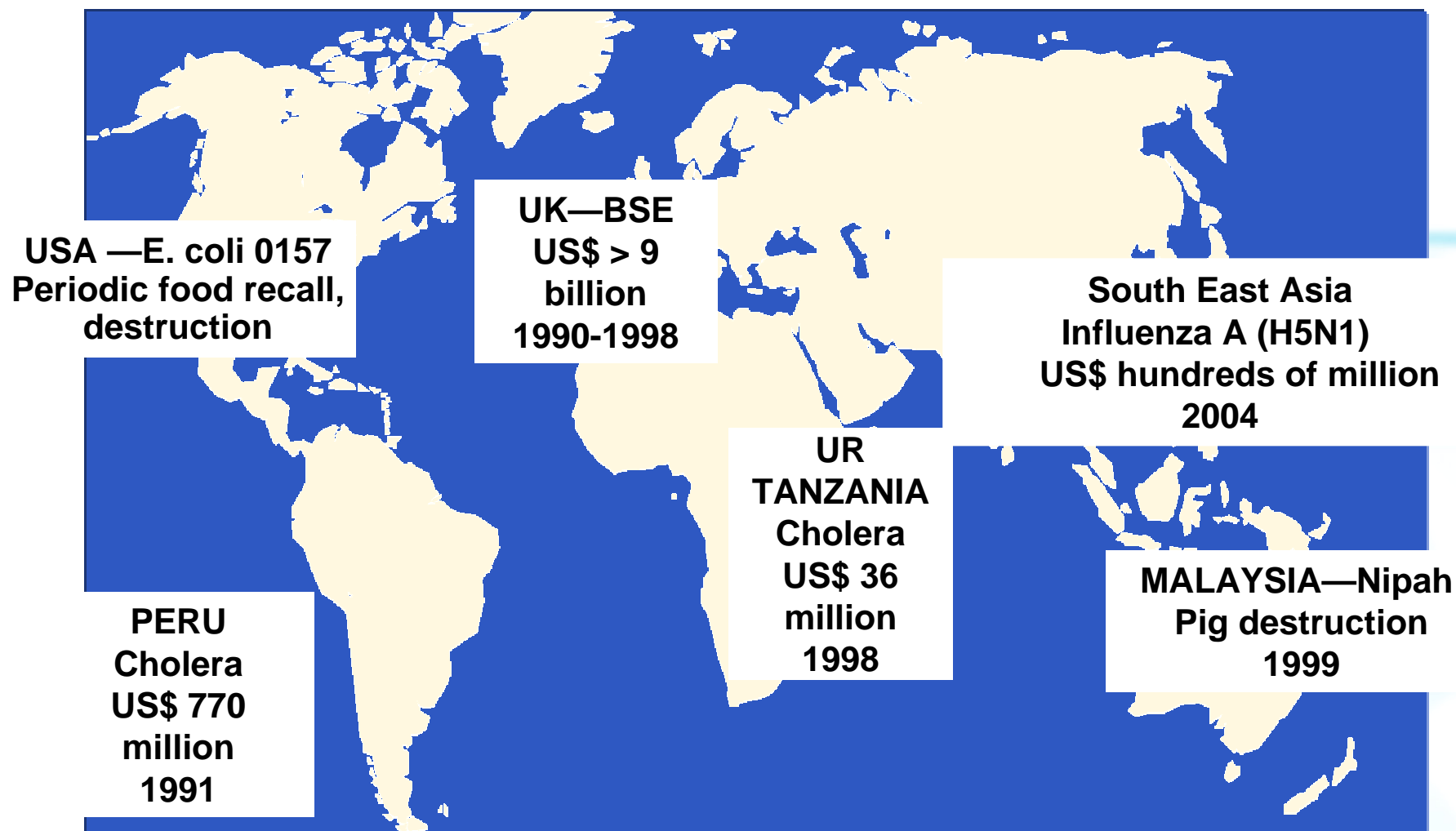
2005 (5 January – 7 February) Outbreak

- 51 Cases Diarrhea from 6 USA States → CDC
- 29 cases confirmed
(S. Enteritidis)
- 7 Canadians
- Common history :-- Common Place /Time Exposure:
 - Jamaica/tourist resorts
 - Preliminary investigation : MOH JAM
 - → Source of Infections: Imported Eggs
 - CDC & CAREC : Holding course on FBD's Surveillance 28 Feb.- 4 March.



Economic impact, food-borne infectious disease outbreaks, 1990–1999

2004



Science



Consumer Confidence



Trade



Politics



Public Health



Communication



Handling foodborne risk



Five keys to safer food

Knowledge = Prevention

A young boy with dark hair, wearing a white shirt, is sitting at a table and eating a bowl of noodles with chopsticks. He is looking directly at the camera with a neutral expression. The background is slightly blurred, showing a bicycle. The text 'How safe is our food?' is overlaid on a yellow rectangular background in the upper right corner of the image.

**How safe
is our food?**

Photography: © 2000 Nelli Sheffer



Food safety initiative
World Health Organization

It depends on what you do with it !

Many – in all parts of the world – do **not**
know the key rules for safer food

Investigations show that a key risk factor for contracting campylobacteriosis is to belong to the group of young males

Likely because surface used for raw chicken will also be used for cooked chicken in this age/sex group

Everyone has a role

Everyone can understand

Consumer protection is primary purpose of any food safety programme

Five keys to safer food

Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pests and other animals

Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.

Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
- ✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✓ Store food in containers to avoid contact between raw and prepared foods

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✓ Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.

Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store food too long even in the refrigerator
- ✓ Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.

Use safe water and raw materials

- ✓ Use safe water or treat it to make it safe
- ✓ Select fresh and wholesome foods
- ✓ Choose foods processed for safety, such as pasteurized milk
- ✓ Wash fruits and vegetables, especially if eaten raw
- ✓ Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

Knowledge = Prevention

Food safety initiative
World Health Organization

WHOSE/INF/05/013
Distribution: General
Original: English

Food safety education for the Consumer

WHO 5 Keys

¿Cómo y cuándo lavar las manos?

Siempre debes lavar tus manos con agua caliente y jabón, frotándolas bien

Antes de	Después de
Comer Tomar alimentos Cocinar	Ir al baño Manipular alimentos crudos (carne, pescado, pollo y huevo), jugo de cítricos y leche de vaca. Servir bebidas, interactuar o tocar

Si quieres aprender y divertirti, puedes visitar www.panorama.org/comunidad

Compañía de educación en inocuidad de alimentos
Cuidar los alimentos, se cuida tu salud

Separa los alimentos crudos de los cocidos

Evita la contaminación cruzada!!!
Los alimentos crudos pueden estar contaminados con bacterias, y trasladarse a los alimentos cocidos o listos para comer.

- Separa siempre los alimentos crudos como pollo, carne y pescado, de los cocidos y de los listos para comer.
- Conserva los alimentos en recipientes separados para evitar el contacto entre crudos y cocidos.
- Usa espátulas y utensilios diferentes, como cuchillos o tablas de cortar, para manipular alimentos crudos y cocidos.

Si quieres aprender y divertirti, puedes visitar www.panorama.org/comunidad

Compañía de educación en inocuidad de alimentos
Cuidar los alimentos, se cuida tu salud

Cocinar completamente los alimentos

- 82°C Aves enteras, pimientos, muslos y alas.
- 77°C Pechugas de pollo y de pavo.
- 74°C Sobrantes, rellenos y cazuelas.
- 71°C Carne medía, hamburguesas, albóndigas, medallones.
- 63°C Carne sazonada de res, ternera, cordero.

Cocina completamente los alimentos, especialmente las carnes, pollos, huevos y pescados

Hervir los alimentos como sopa y guisos para asegurarte que alcanzan 70°C.
Para las carnes rojas y pollo, cortar que los jugos sean claros y cocidos.
Es necesario el uso de termómetro.
Finalizar completamente la cocción con vapor. Asegurarse que no borbotee al menos los 70°C.

Si quieres aprender y divertirti, puedes visitar www.panorama.org/comunidad

Compañía de educación en inocuidad de alimentos
Cuidar los alimentos, se cuida tu salud

Mantener los alimentos a temperaturas adecuadas

70°C La cocción adecuada (más de 70°C) garantiza un alimento seguro a la hora.

Zona de Peligro
Alimentos con riesgo de contaminación

5°C La refrigeración adecuada (por debajo de 5°C) reduce el crecimiento y la multiplicación de los bacterias.

Si quieres aprender y divertirti, puedes visitar www.panorama.org/comunidad

Compañía de educación en inocuidad de alimentos
Cuidar los alimentos, se cuida tu salud

Utiliza agua y materias primas seguras

2 gotas de blanqueador

¡Cuándo vences

5'

Todos los alimentos que consumes deben provenir de fuentes confiables.

Usa agua potable o tratada.
Incluíndolos alimentos procesados.
Lava las frutas y verduras.
Verifica la fecha de vencimiento y los contenidos alimentarios venidos.

Si quieres aprender y divertirti, puedes visitar www.panorama.org/comunidad

Compañía de educación en inocuidad de alimentos
Cuidar los alimentos, se cuida tu salud

Posters
Games
Interaction



Community Channel: Facilitating food safety knowledge for the consumer

Simple and objective messages

Consumer
Children
Teachers

Downloads



Atractive
design

Interactive



<http://www.panalimentos.org/comunidad>

Children education: Strategy to change habits ²⁰⁰⁴

La carrera del Cocinero y el Capitán de los alimentos

1 Bienvenido a la cocina!! Reconoce tu misión: lavar tus manos con agua y jabón. Avanzas 1 espacio.

2 Oh No! Dejaste subir a la mesa de la cocina a tu perrito "Bobby" mientras preparabas el desayuno. Retrocedes 1 espacio.

3 Super! Utilizaste diferentes cuchillos para cortar el pollo crudo y las papas cocidas. Avanzas 2 espacios.

4 Tienes sod y no tienes agua potable. Para potabilizar el agua debes haberla hervido por 5 minutos. Debes retroceder 2 espacios.

5 Por haber guardado inmediatamente la comida en el refrigerador. Te mereces avanzar 2 espacios.

6 Visitaste la página www.panalimentos.org y te informaste acerca de cómo evitar las enfermedades transmitidas por alimentos. ¡Vimos!!! Avanzas 4 espacios.

7 Oh Mami!!! La hamburguesa que preparaste ayer se está poniendo mala. Por mala de esa manera. Retrocedes 2 espacios.

8 Organizaste el refrigerador de forma tal que los alimentos crudos no gotieen sobre los alimentos cocidos. Felicitaciones! Avanzas 3 espacios.

9 Para acompañar la hamburguesa te decidiste por unas verduras, las lavaste bien ya que vas a consumirlas crudas. Bien Hecho!! Avanzas 3 espacios.

10 Cocinaste el pavo, pero lo dejaste crudo en su interior. Siempre debes cocinar las carnes hasta que alcancen los 70 °C y esté bien cocido su interior. Retrocedes 3 espacios.

11 Ganaste!! Aprendiste que cuidar tus alimentos es cuidar tu salud.

12 Compraste un pastel de pescado a un vendedor ambulante y la comida no estaba en el refrigerador. Por tu mala elección debes retroceder 5 espacios. Que pena!! Ya casi llegabas.

13 Para seguir aprendiendo puedes visitar www.panalimentos.org

14 Cuidar los alimentos, es cuidar tu salud.

15 WHO

16 FAO

17 UNICEF

18 Para seguir aprendiendo puedes visitar www.panalimentos.org

19 Campaña de educación en inocuidad de alimentos

20 Legada!!

Bringing food safety home

- **How to use the WHO 5 keys to safer food to create effective food safety training for specific target audiences - a manual**
- **Intended to elaborate on the core food safety messages and to suggest how these messages might be communicated.**
- **Although the material should be adapted to suit the basic needs of a specific target population, it is important that the core messages remain intact.**

Training aimed at:

- **School children, or**
- **Consumers, or**
- **Food Handlers, or**
- **Street food vendors, or**
- **Small food businesses, or**
- **Catering, or**
- **Restaurants, or**

Evaluation of improvement in knowledge, attitude and reported/actual food safety behavior after using the 5 keys training material/manual

• ***Knowledge***

Key 1 – Keep clean

- It is important to wash hands *before* handling food
True / False
- Kitchen cloths can spread microorganisms
True / False

Key 2 – Separate raw and cooked

- You can use the same chopping-board for raw and cooked foods as long as there are no visible juices/residues
True / False
- When food is in cold storage there is no need to keep it separate
True / False

Safer

How safe is our food?

Five keys to safer food



Keep clean

- ✓ Wash your hands before handling food and often during food preparation
- ✓ Wash your hands after going to the toilet
- ✓ Wash and sanitize all surfaces and equipment used for food preparation
- ✓ Protect kitchen areas and food from insects, pets and other animals

Why?
While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, clothing, boots and the slightest contact can contaminate food and cause foodborne disease.



Separate raw and cooked

- ✓ Separate raw meat, poultry and seafood from other foods
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- ✓ Store food in containers to avoid contact between raw and prepared foods

Why?
Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.



Cook thoroughly

- ✓ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✓ Stirng foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry make sure that juices are clear, not pink. Ideally use a thermometer
- ✓ Retest cooked food thoroughly

Why?
Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food for a few minutes at 70°C can kill most of the germs. However, some germs require special attention. These include ground meat, undercooked large pieces of meat and whole poultry.



Keep food at safe temperatures

- ✓ Do not leave cooked food at room temperature for more than 2 hours
- ✓ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✓ Keep cooked food piping hot (more than 60°C) prior to serving
- ✓ Do not store hot soups or stews in the refrigerator
- ✓ Do not thaw frozen food at room temperature

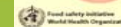
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Why?
Raw materials, including water and air, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be harmful to humans and animals. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.



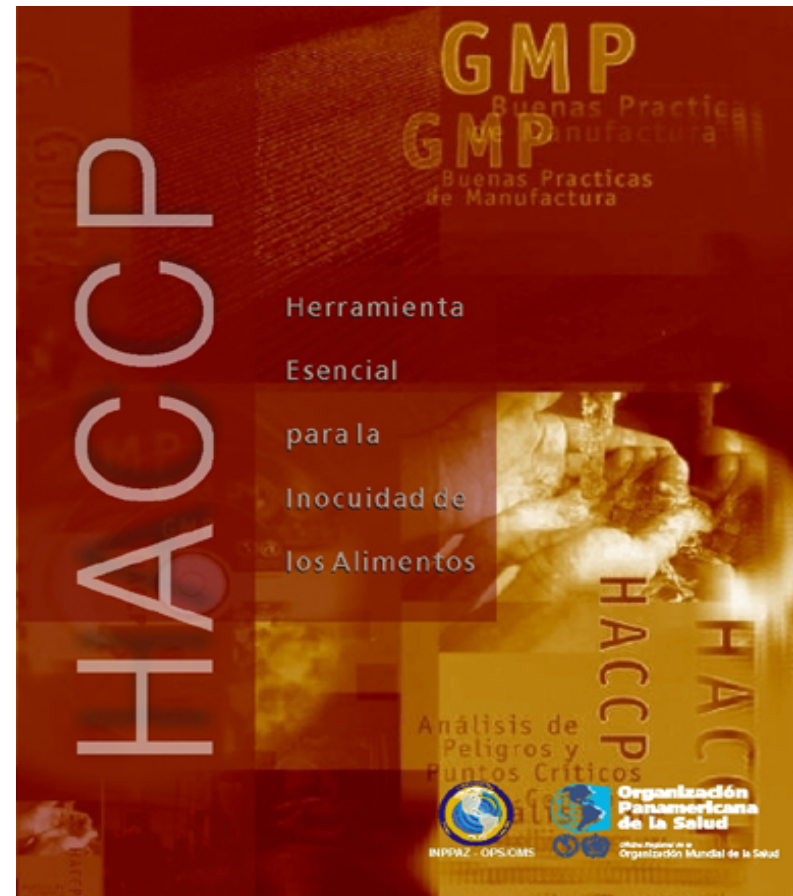
Knowledge = Prevention



Food safety initiative
World Health Organization

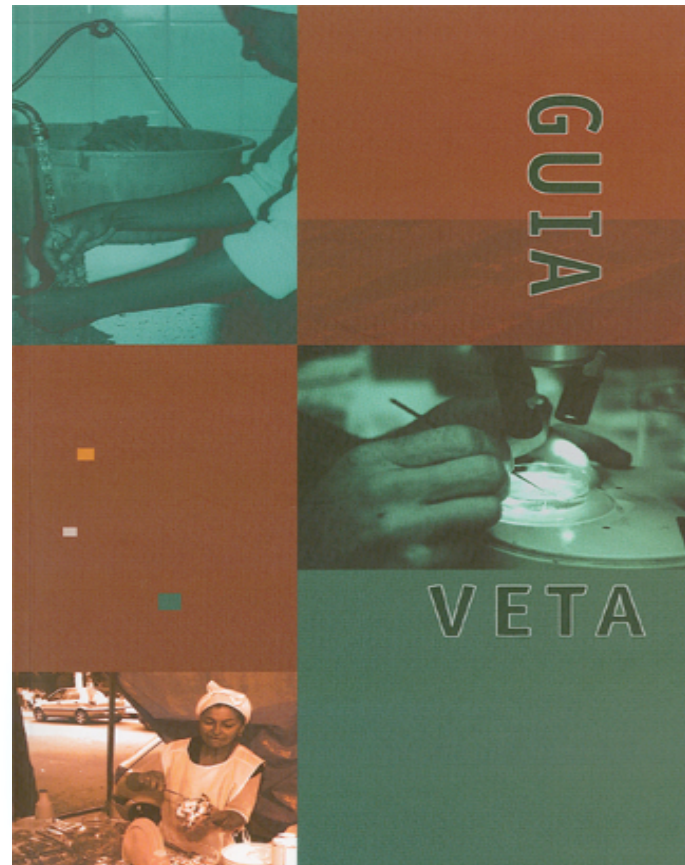
PAHO/WHO Training Package on HACCP

- GMP
- SSOP
- HACCP Implementation
- HACCP auditing



PAHO/WHO Guidelines for the Establishment & Strengthening of Foodborne Disease Surveillance Systems

- PAHO/WHO Guidelines for the Establishment & Strengthening of Foodborne Disease Surveillance Systems.





Need for linking food safety authorities

- **International concern :**

1996: BSE in beef

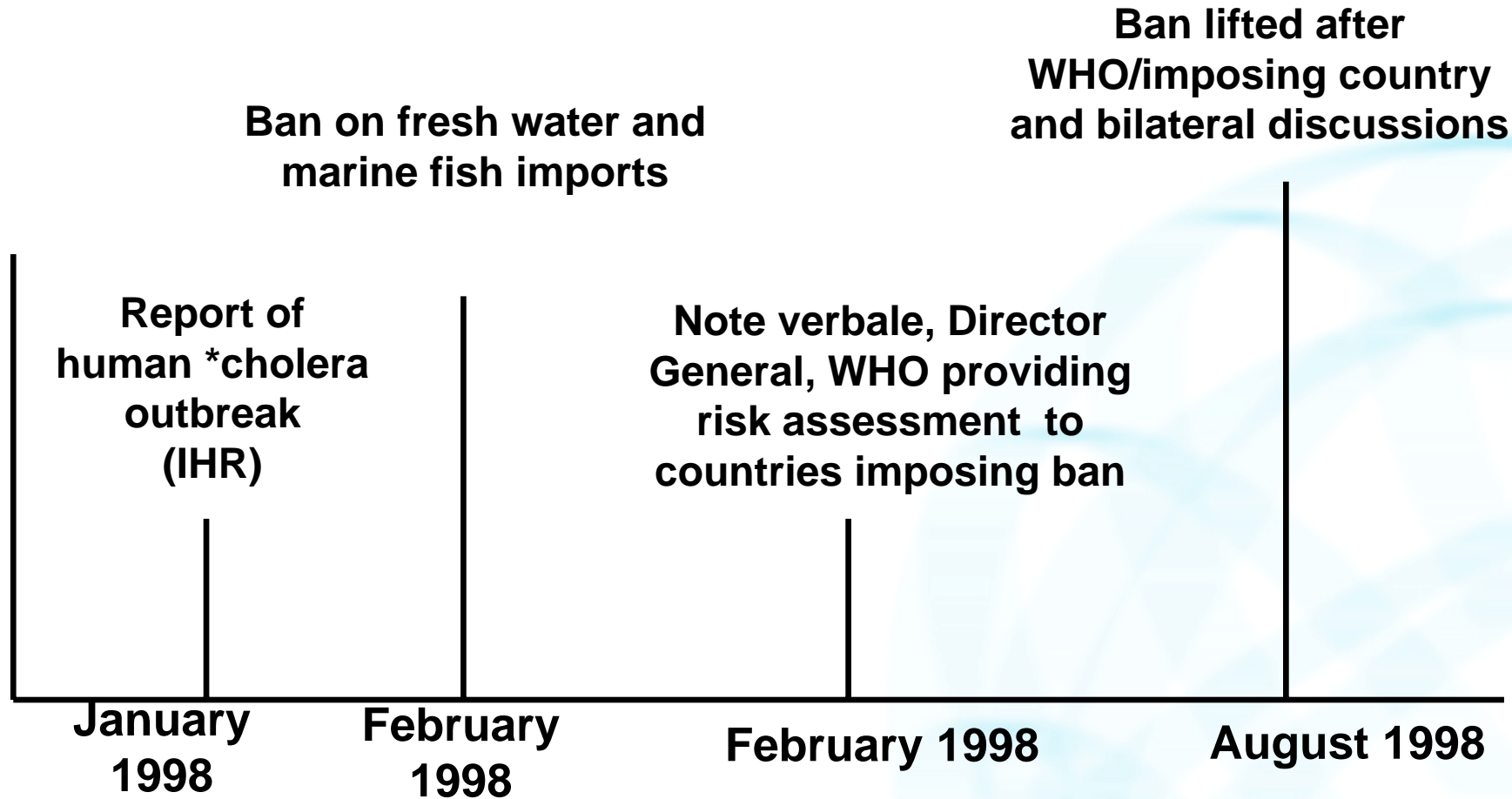
1997: Dioxin in chicken

1998: Cholera in fish

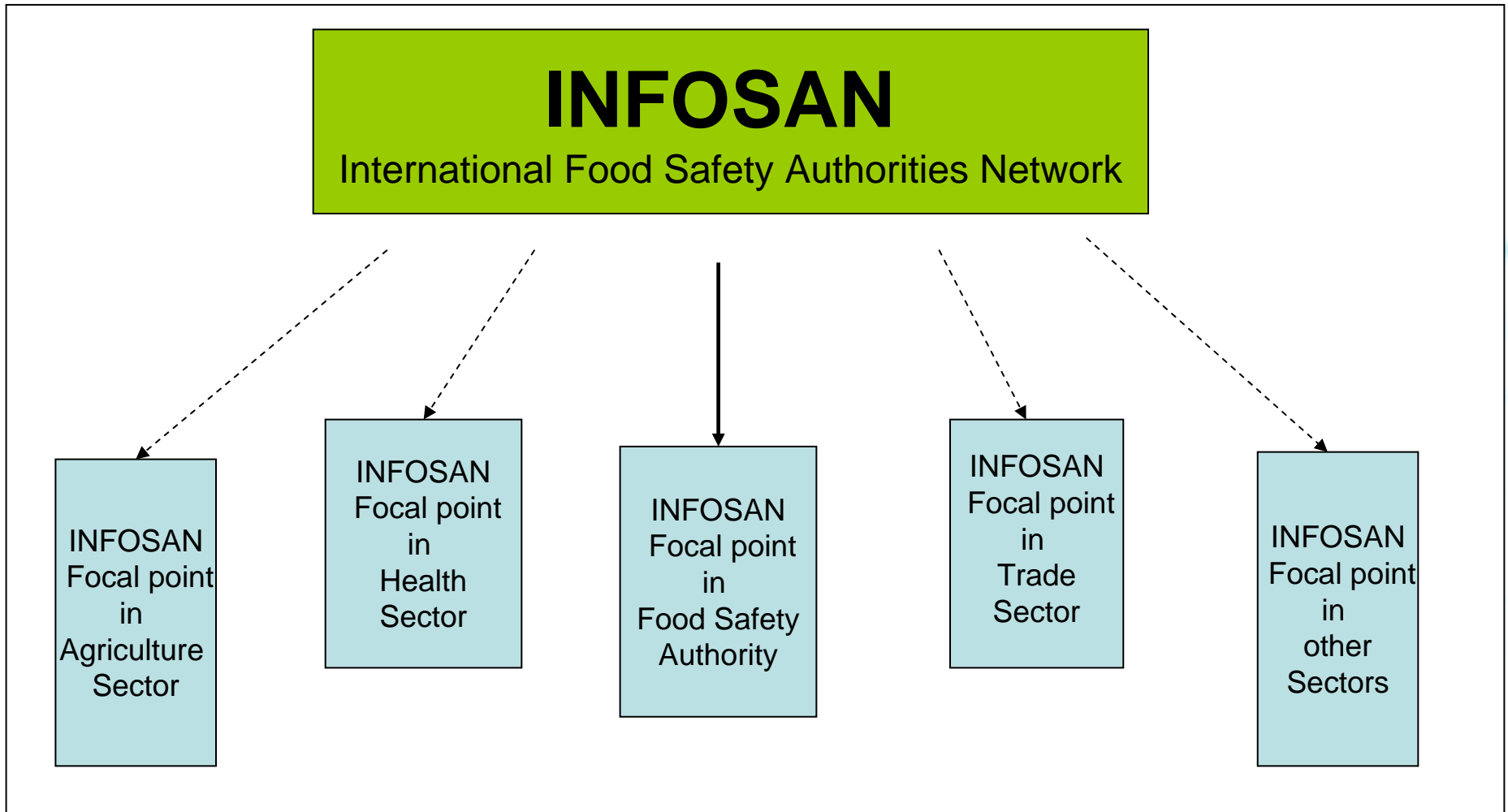
2004: Avian Flu in Chicken

2004: Enterobacter sakazakii in infant formula powder.

V. cholerae outbreak, Tanzania, 1998: perceived vs actual risk

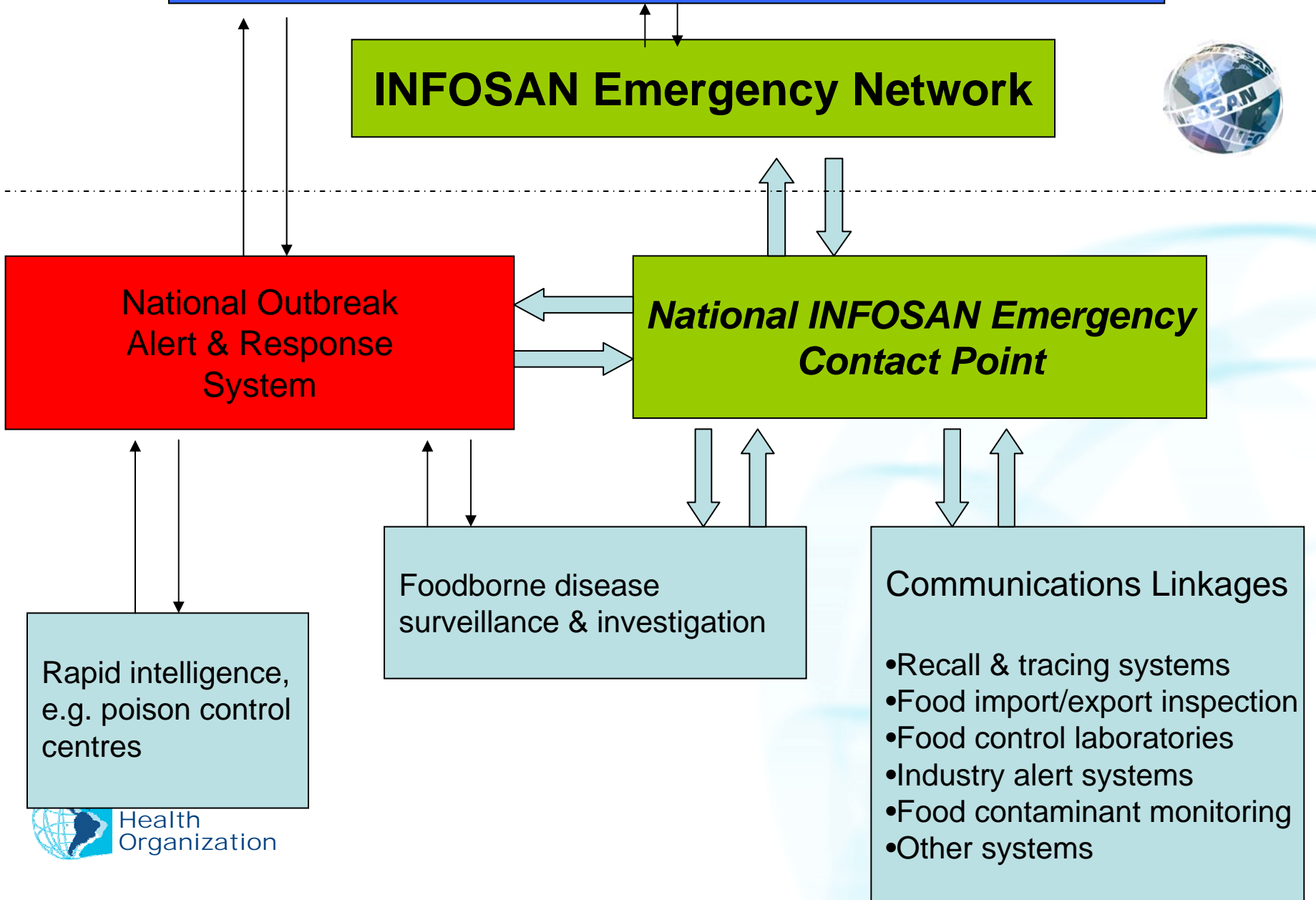


***Cholera is endemic in Eastern Africa including Tanzania**



WHO Global Outbreak Alert & Response (GOARN)

INFOSAN Emergency Network



POTENTIAL INFOSAN INFORMATION

- 2002: Acrylamide in food
- 2003: SARS
- 2004: Avian Flu in Chicken
- 2004: Enterobacter in Powdered Infant Formula
- 2004: Salmonella in tahini and almonds

POTENTIAL INFOSAN EMERGENCY ACTIVITY

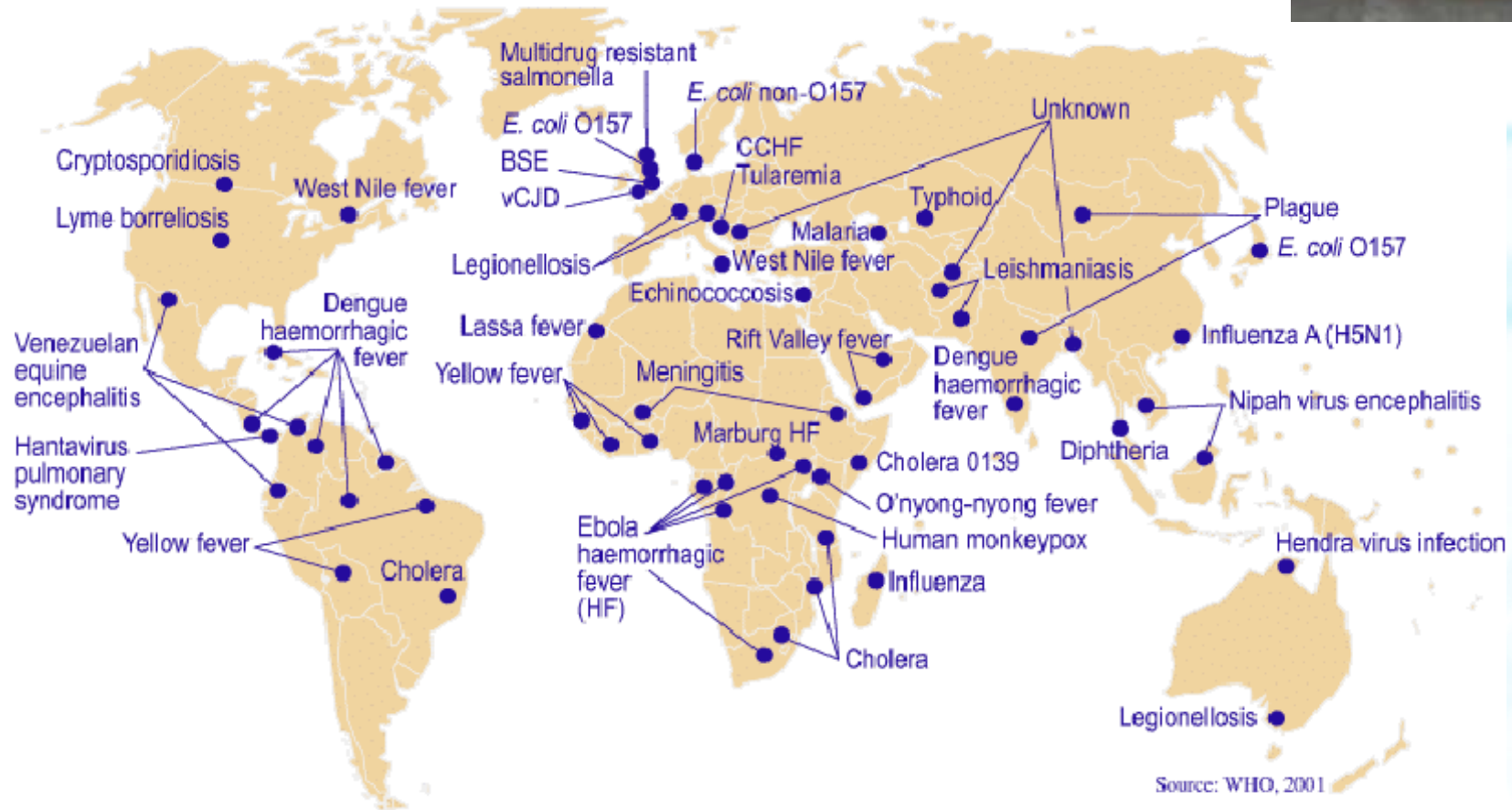
1996:	BSE
1997:	DIOXIN
2004:	Avian Flu

INFOSAN DEVELOPMENT

- Reaching out to all Food Safety Authorities
- Guided by the participants
- Looking for partners



Some WHO-facilitated epidemic response in the field, 1998–2003



Emergencies are unpredictable!

Fig. 1: Systematic Approach to Curriculum
Design, Training
& Field Application of Information

Problem (s) --->Needs---->Curriculum ----> Goal & Purposes-->

----->Learning objectives----->Methodology----->Training----->

----->Evaluation of training (pre- and post-tests)----->

-----> Field Application of HACCP to selected fish and produce industries-----> Use of information for feedback training activities----->Adjust Curriculum of training program

PAHO/WHO Websites Veterinary Public Health Unit

- <http://www.who.org>
- <http://www.paho.org>
- <http://www.panaftosa.org.br>
- <http://www.panalimentos.org>