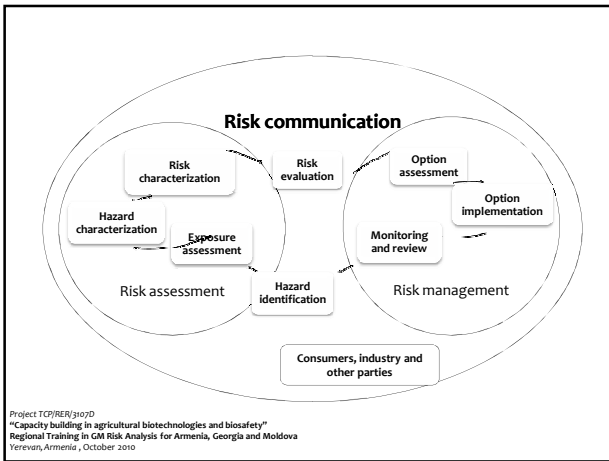
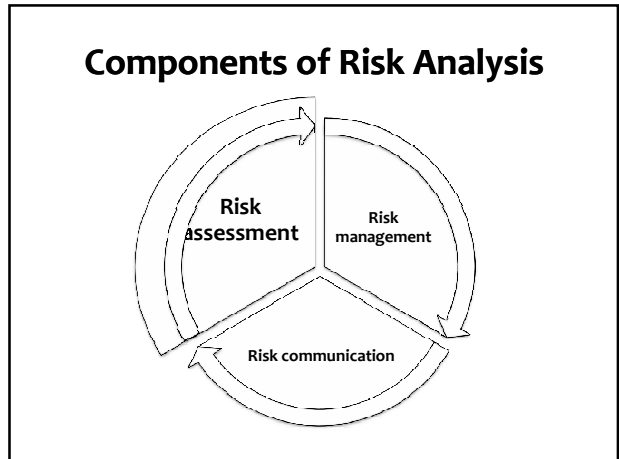


Ecozd-FBLI Ecohealth/One Health short course  
May 27-30, 2013 Hanoi

# Introduction to risk assessment

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## Illustrated ICMSF Simplified Guide to Understanding and Using Food Safety Objectives and Performance Objectives

International Commission on Microbiological Specifications For Foods, 2006

## Foodborne disease and risks

Bacteria Their metabolites Parasites Toxins Viruses

ICMSF, 2006

## Public Health impact and cost

Poor hygienic practices

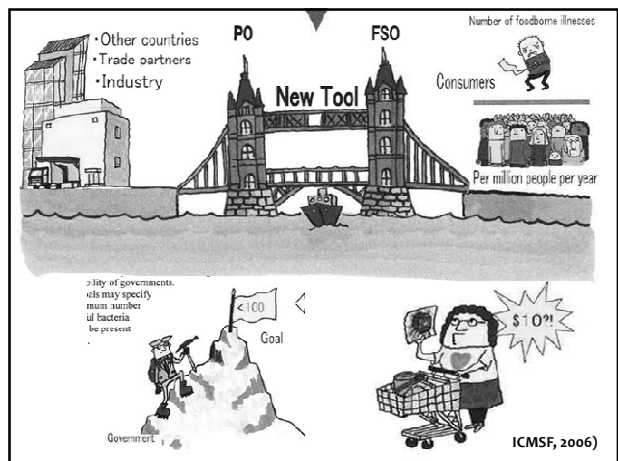
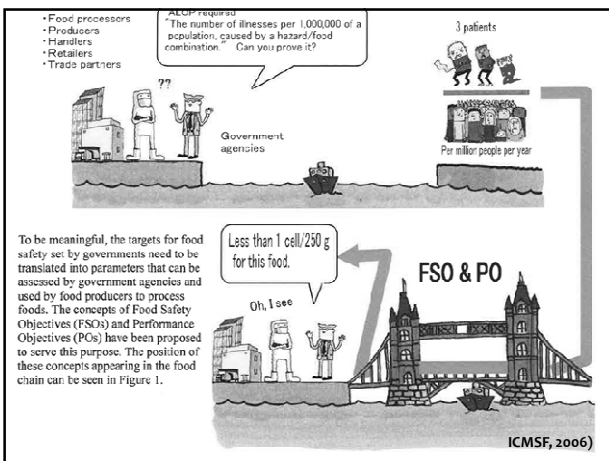
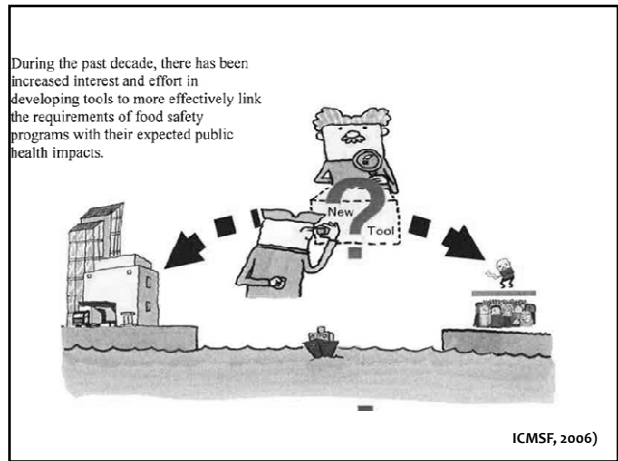
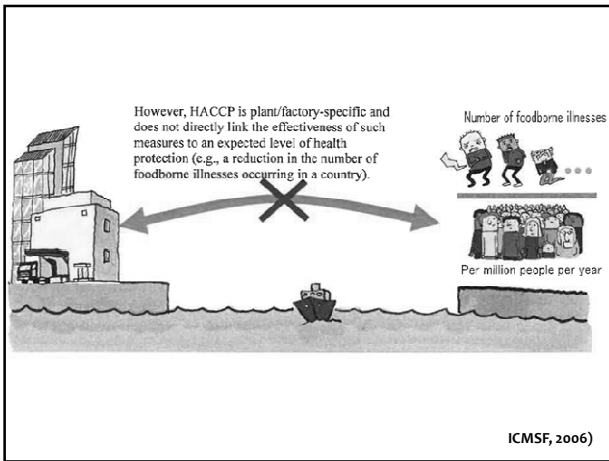
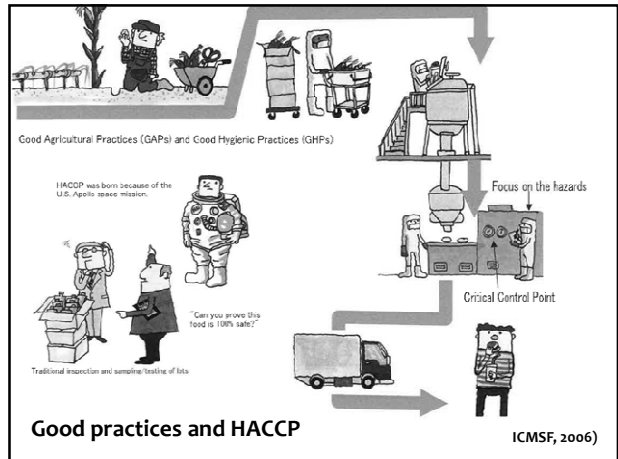
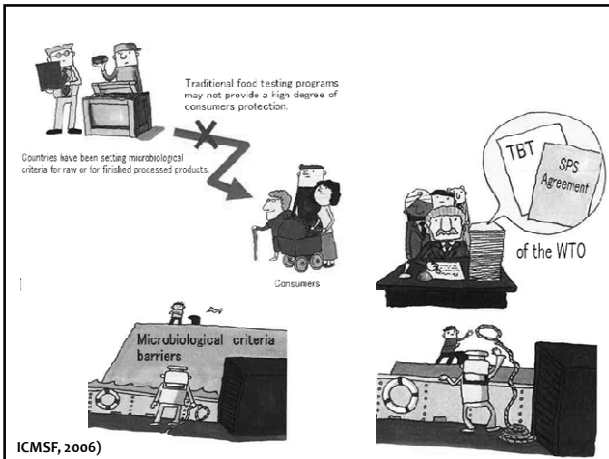
Poor sanitation

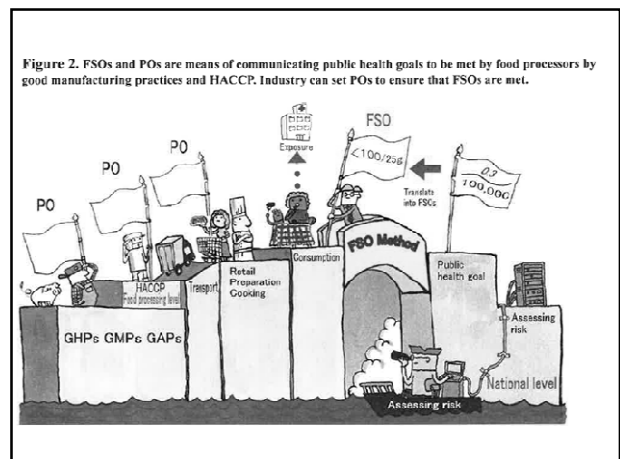
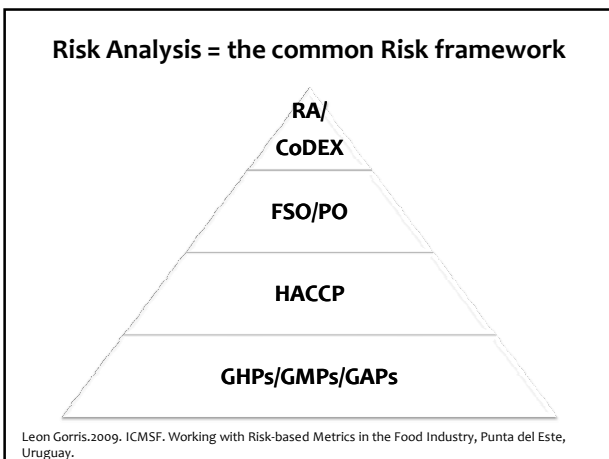
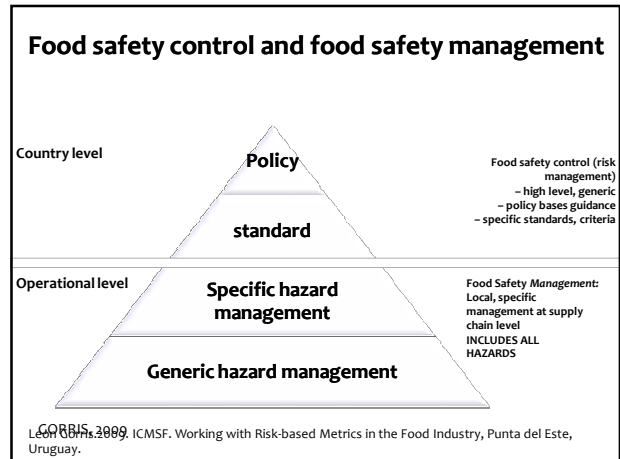
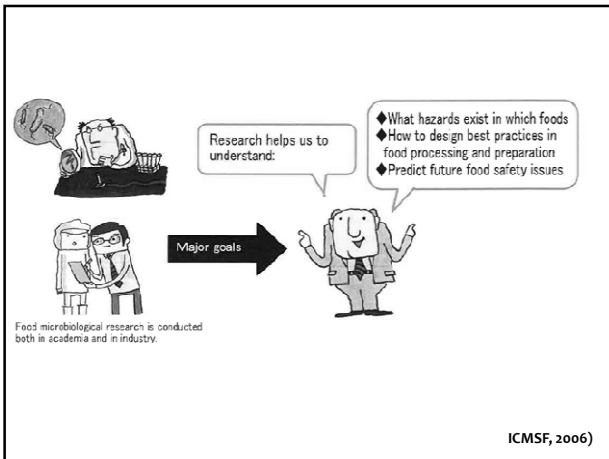
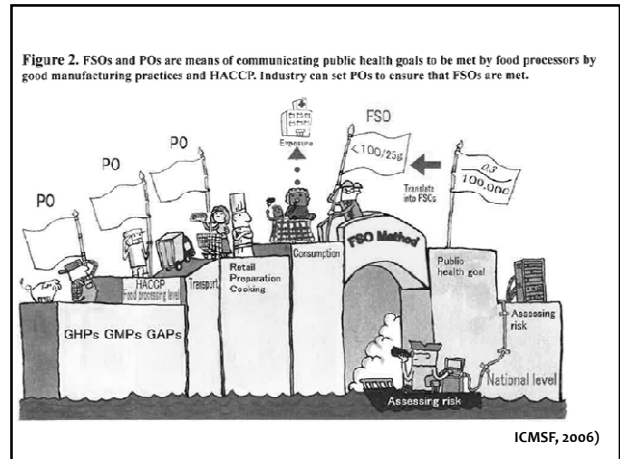
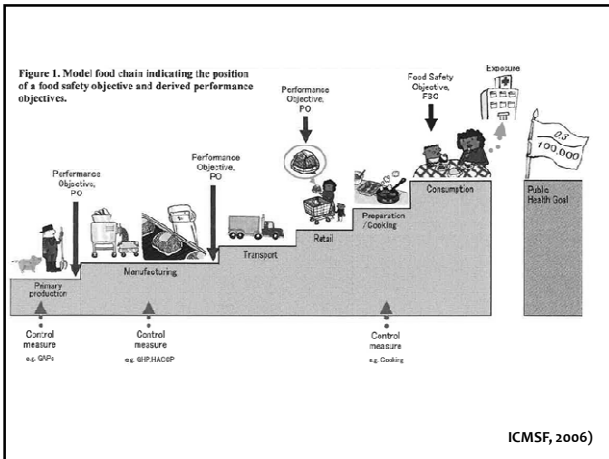
Remove!!

Unpasteurised milk

\$107

ICMSF, 2006



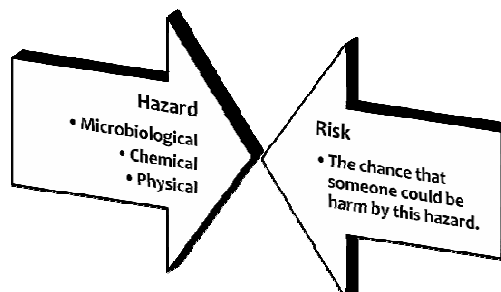


## risk assessment

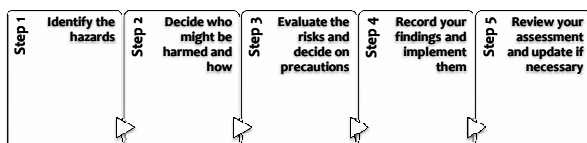
- A risk assessment is simply a careful examination of what, your interest, could cause harm to people
- Taken enough precautions or should do more to prevent harm.

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www.hse.gov.uk/pubns/indg163.pdf.

## Hazard & Risk



## How to assess the risks



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www.hse.gov.uk/pubns/indg163.pdf.

## Microbial food safety risk assessment

1. Safety assessment uses scientific risk- based method
2. Safety assessment conducted on a case-by-case basis
3. Consideration is given to both intended and unintended effects
4. Comparison are made with conventionally produced food.

FAO, Project TCP/RER/3107D  
"Capacity building in agricultural biotechnologies and biosafety"  
Regional Training in GM Risk Analysis for Armenia, Georgia and Moldova  
Yerevan, Armenia , October 2010

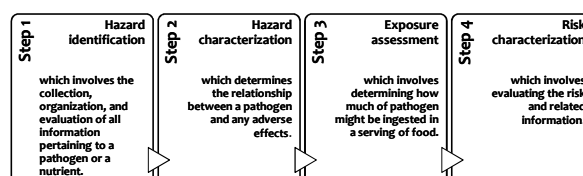
## Microbiological Risk Assessment estimates

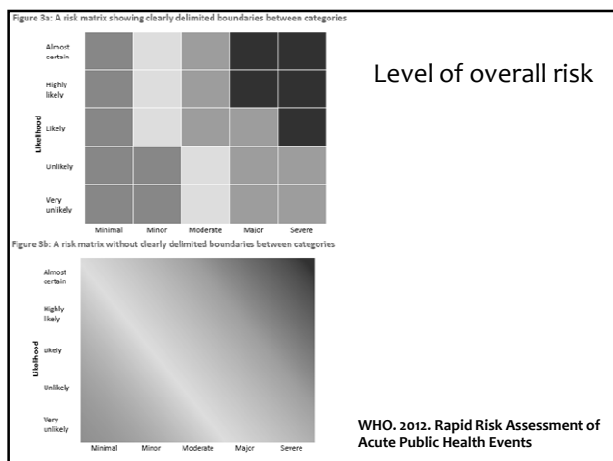
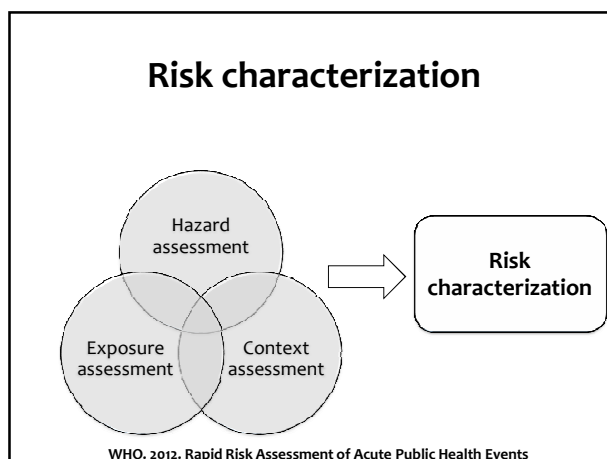
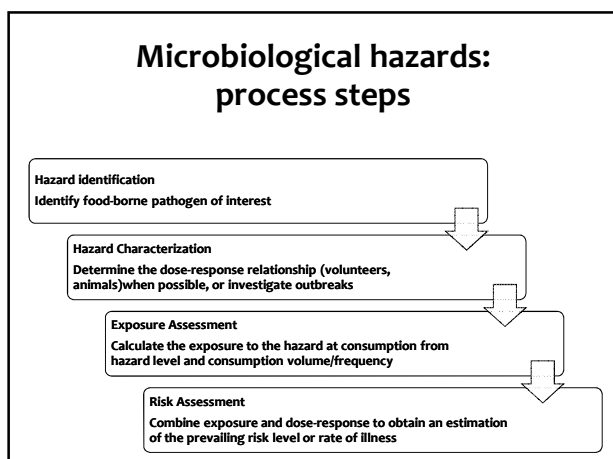
**Population level:**  
- Estimated number of cases of illness per year per population (e.g. 100.000 persons) caused by a micro-organism in a food or food group

**Consumer level**  
- Chance of illness due to consumption of a specific food-product to which a hazard can be associated (risk per serving / event)

Leon Gorris.2009. ICMSF. Working with Risk-based Metrics in the Food Industry, Punta del Este, Uruguay.

## How to assess the *microbiological* risks





### Qualitative risk characterization in risk assessment

used for screening risks to determine whether they merit further investigation, and can be useful in the 'preliminary risk management'

World Health Organization Food And Agriculture Organization Of The United Nations 2009 . Risk Characterization of Microbiological Hazards in Food. Microbiological Risk Assessment Series

### Qualitative risk characterization in risk assessment

\* FAO/WHO (2004) noted:  
 "Qualitative risk assessments may be undertaken, for example, using the process of 'expert elicitation'. Synthesizing the knowledge of experts and describing some uncertainties permits at least a ranking of relative risks, or separation into risk categories. ... As assessors understand how qualitative risk assessments are done, they may become effective tools for risk managers."

World Health Organization Food And Agriculture Organization Of The United Nations 2009 . Risk Characterization of Microbiological Hazards in Food. Microbiological Risk Assessment Series

### Quantification in risk assessment

- \* The degree of quantification
- \* Numerical data available
- \* How quick the assessment is required
- \* complexity of the issues
- \* poor data or inappropriate quantitative techniques

WHO. 2012. Rapid Risk Assessment of Acute Public Health Events

