

Food Safety in China and Finland  
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# Assessing food safety risks in Finland

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# Risk assessment

# Background

- GATT, WTO, Agreement on Sanitary and Phytosanitary Measures

**Target:** free trade – global concept for transparent comparison  
risk assessment, equivalency, fair trade

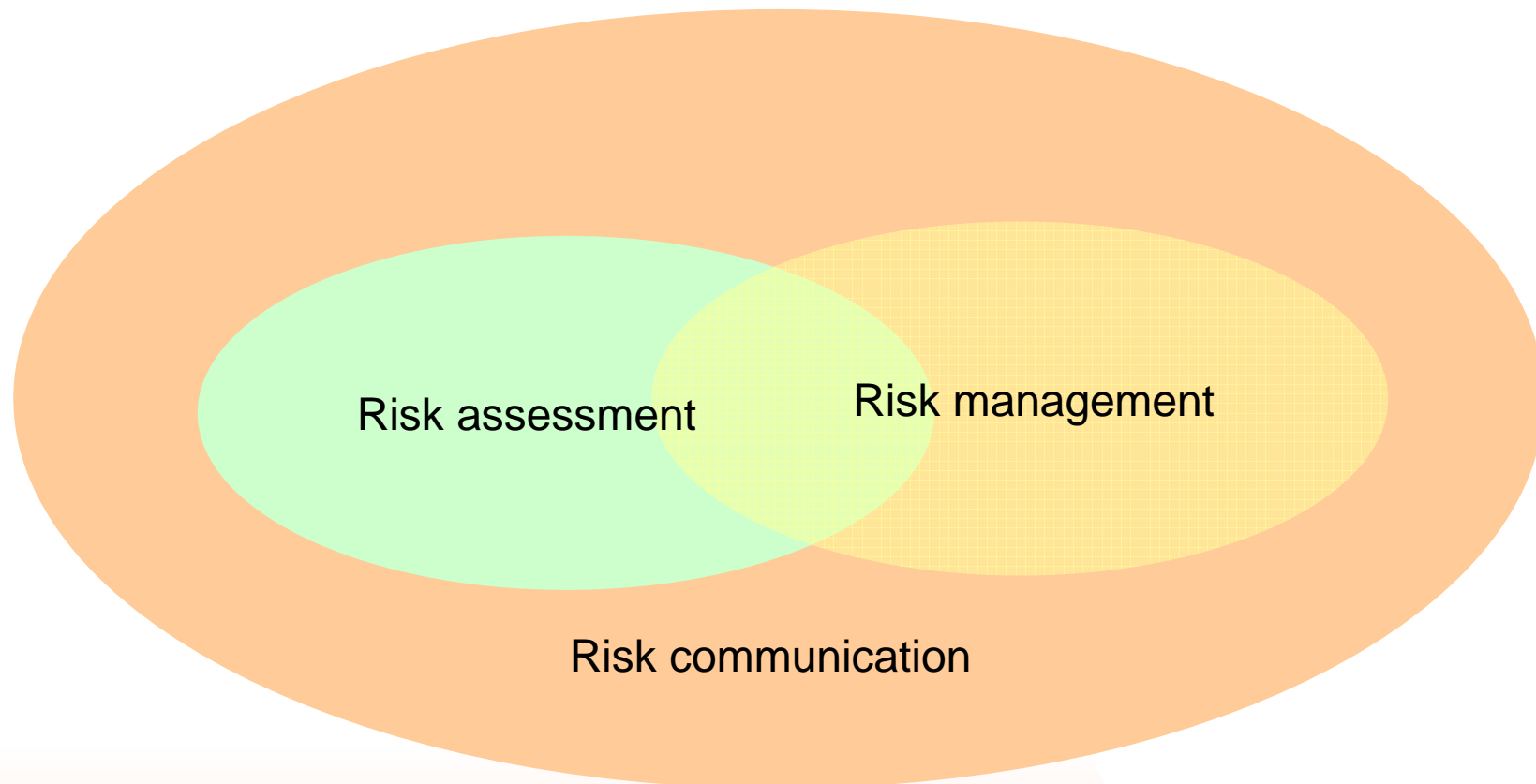
Main organisations giving guidance:

- Codex, Codex Alimentarius Commission  
→ food safety  
[http://www.codexalimentarius.net/web/index\\_en.jsp](http://www.codexalimentarius.net/web/index_en.jsp)
- OIE, World organisation for animal health  
→ animal diseases  
[http://www.oie.int/eng/en\\_index.htm](http://www.oie.int/eng/en_index.htm)
- IPPC, International Plant Protection Convention  
→ plant health  
<https://www.ippc.int/IPP/En/default.jsp>

& EU and national regulations



# Risk assessment in food safety field



Risk analysis based on Codex Alimentarius Commission

# Risk assessment

**Risk Assessment: structured research based on analysed data and knowledge conducted by scientific methods and principles**

→ result: risk estimate

- magnitude of the risk and
- the uncertainties

- Hazard: a biological, chemical or physical agent potential to cause adverse health effects
- Risk: probability and severity of the hazard

simplification – relativity – independence – objectivity – transparency

# Risk assessment: information for different usage purposes

- magnitude and uncertainty of the risk
- comparison of different risks
- comparison of different risk management options
- definition and evaluation of intermediate targets (control programmes, regulation,...)
- costs due to risk management
- cost-benefit analyses
- ...
- the approach can be applied also to local food inspection and in-house control
  
- → → risk based food safety management\* (WTO, EU, Finnish government)  
the most efficient ways to manage risks

*\*Risks managed in accordance with the desired outcome by setting intermediate targets to such levels that the outcome will be achieved.*



# Example: QMRA on Salmonella

## Finnish Salmonella Control Programme FSCP

- The goal (1995): "to maintain the good salmonella situation" (ALOP de facto)
- Requirements:
  1. prevalence may not exceed 1% at any stage of the food chain (beef, pork, poultry meat and egg production), and
  2. restrictive measures will follow any positive salmonella finding



# Special guarantees (SGs) for imports

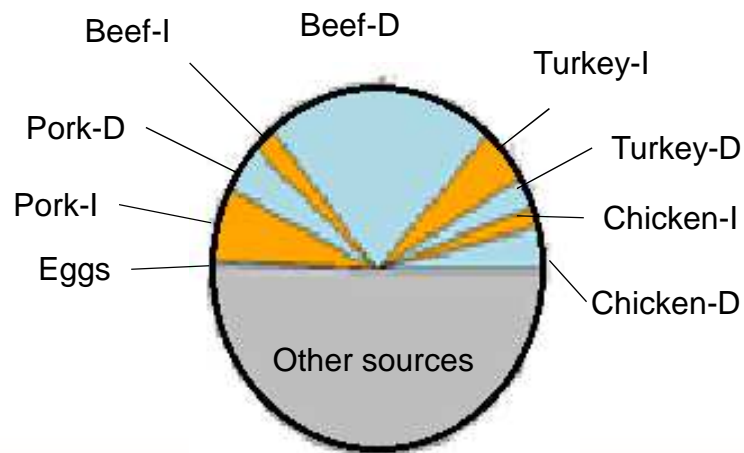
- fresh meat from bovine and porcine animals, fresh poultrymeat, table eggs and minced meat
- microbiological tests
- sampling methods
- should not be applicable to any consignment that is subject to a programme recognised as equivalent

# Modeling salmonella risk

## Example: beef production chain

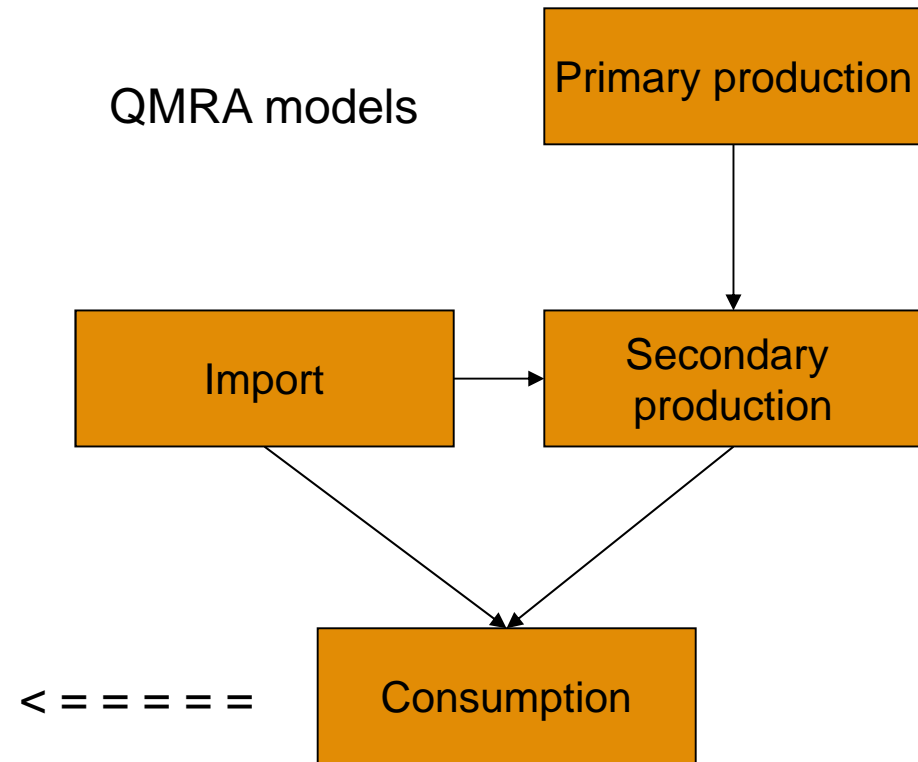
Source attribution

2010



D, domestic  
I, imported

QMRA models



# Conclusions

- Finnish consumers were probably exposed to salmonella as much from imported beef and beef-derived foods as from domestic ones, although the share of the imported beef products was only 13% out of all that was available for consumption
- Microbiological target of 1% prevalence was not in compliance with the health goal. If the apparent salmonella prevalence had reached the highest accepted prevalence of 1% at some stage of the domestic beef chain, the goal of maintaining the -95 human incidence due to beef may not have been achieved
- Expanding special guarantees to cover all beef-derived imports might decrease the salmonella risk, whereas rise of imports and/or change in the exporting countries might increase the consumer risk.

# **Risk assessments concerning food safety in Finland**

# Food safety organisation

MINISTRY OF AGRICULTURE AND FORESTRY

Ministry of  
Social Affairs  
and Health

Ministry of  
Employment  
and  
the Economy

Ministry of  
Finance

MAVI

FINNISH FOOD SAFETY AUTHORITY

THL

KUV

Customs

MTT

ELY

Authorized  
inspectors

AVI

Fimea

KTK

Customs  
laboratory

RKTL

Food  
laboratories

Municipal  
authorities

Valvira

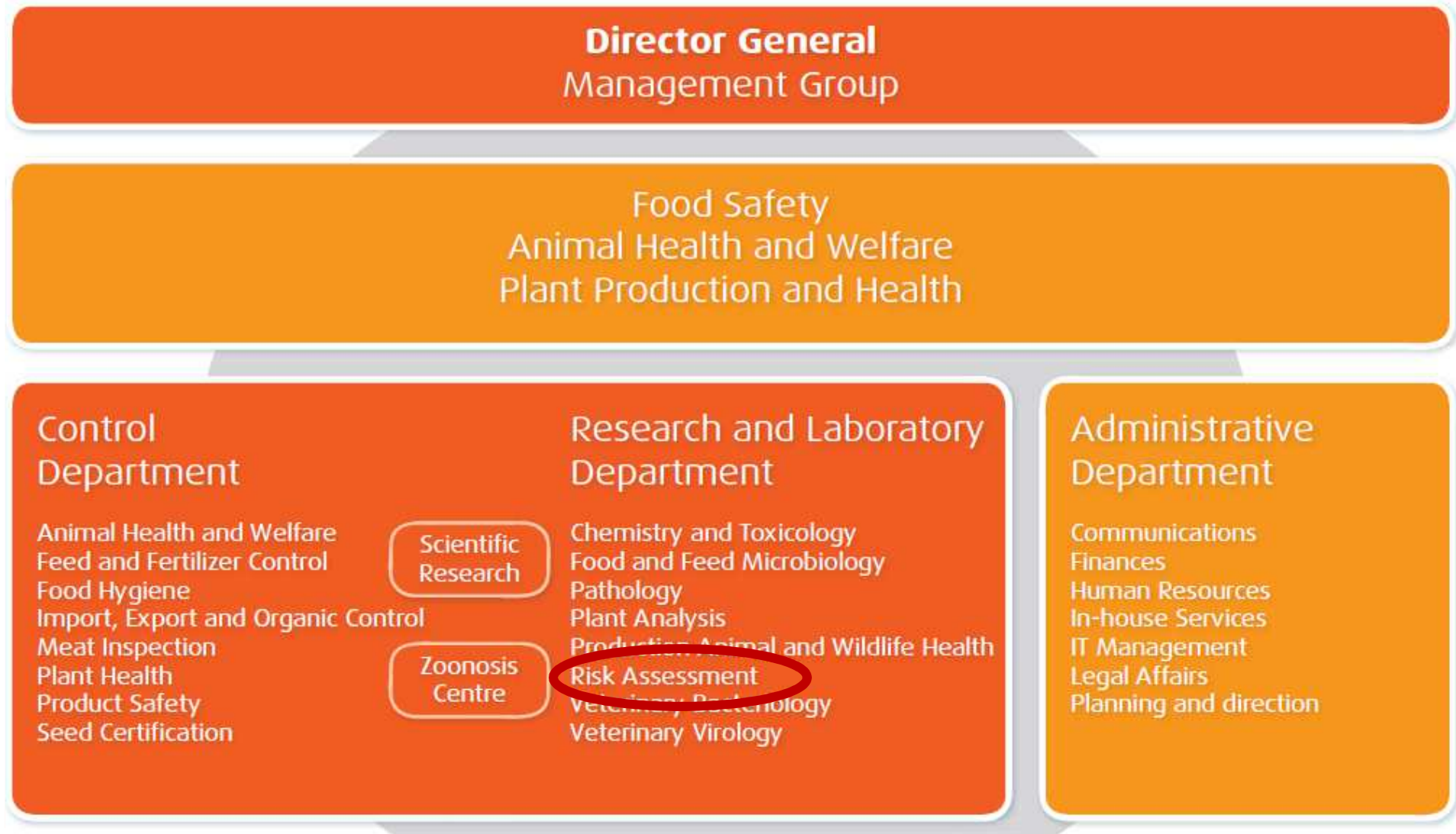
MIKES/  
FINAS

METLA

STUK

Tukes

# Evira's organisation



- National Nutrition Council
- Zoonosis Centre
- EFSA's Finnish Focal Point

# Risk Assessment Research Unit

- Quantitative and qualitative risk assessments, risk profiles, surveys, reports
- Cooperation with/between stakeholders in Evira, outside Evira, and abroad
- EFSA Focal Point Finland

- Sections for
  - 1) Animal Diseases and Plant Health
  - 2) Food Safety

- zoonoses
- food microbiology
- food hygiene
- food chemistry
- nutritional safety

With other institutes and universities

- public health
- cost/benefit
- environment
- society

- information to the risk management, policy making etc.
- informed decisions

More about the Risk Assessment Unit and risk assessment:

<http://www.evira.fi/portal/en/about+evira/about+us/operation+areas/risk+assessment/>



# Current research projects:

- Campylobacter in the food chain and in the environment
- Risk assessment and cost-benefit analysis of salmonella in feed and animal production
- Baltic herring as nutrition; risk-benefit analysis
- Dietary exposure of Finnish children to heavy metals – a cumulative risk assessment
- Exposure of children and adults to nitrites and nitrates
- PlantLIBRA: Plant food supplements. Levels of intake, benefit and risk assessment
- Safe Fertilizer Products from Biogas Plants (BIOSAFE)

⇒ Use and spread of resistant bacteria / medicinal residuals

⇒ A Finnish food safety information publication system: evaluation and visible trends





**Thank you for your attention!**