This talk...

- Introduction
- Risk Analysis
- Risk Management
- Risk Assessment
- Risk Communication
- FAO/WHO Development of Scientific Advice


- This agreement is the starting point...
- Food can be freely imported if that does not endanger the country’s Appropriate Level Of Protection (ALOP)
- Risk assessment is an important tool for assisting in the elaboration of food safety measures.

Appropriate Level Of Protection

- Level of protection deemed appropriate by a member (country) establishing a sanitary or phytosanitary measure to protect human, animal or plant life or health within its territory.
- Country should not be endangered by imported foods

But remember...

- Although defining an acceptable level of risk is exceedingly difficult, it is important to communicate that a level of zero risk cannot be attained or expected.
- In the context of food safety, an ALOP is a statement of the degree of public health protection that is to be achieved by the food safety systems implemented in a country.

From country level to operational level

- ALOP
- Risk Analysis
- HACCP
- Prerequisite Programmes
- GMP, GHP, GAP etc.
- Physical Infrastructure Layout and design of establishments
**Risk Analysis**

- Overall objective of risk analysis in food safety is to ensure human health protection
- Is the link between food safety objectives at a country or international level, and
- The operational procedures at company level (based on PRPs and HACCP) that are needed to ensure that food safety is maximised for society

**Codex Definitions**

- **Risk**
  - A function of the probability of an adverse effect and the magnitude of that effect, consequential to a hazard(s) in food.
- **Risk Analysis**
  - A process consisting of three components: risk assessment, risk management and risk communication.

**Risk Analysis Components**

- **Risk Management**
  - What can we do about the risk?
  - Political process
- **(Quantitative) Risk Assessment**
  - How big is the risk, what factors control the risk?
  - Scientific process
- **Risk Communication**
  - How can we talk about the risk with affected individuals?
  - Social and psychological process

**Risk analysis should be:**

- Applied consistently
- Open, transparent and documented
- Evaluated and reviewed as appropriate in the light of newly generated scientific data

**The Risk Analysis Process**

**Risk management**

- Process, distinct from risk assessment, of weighing policy alternatives in consultation with interested parties, considering risk assessment and other legitimate factors, and, if need be, selecting appropriate prevention and control options
- Implementation of risk management decisions at national level should be supported by an adequate food control system
**Risk assessment**

- The scientific evaluation of known or potential adverse health effects resulting from human exposure to food borne hazards, consisting of four steps: hazard identification, hazard characterization, exposure assessment and risk characterization.

- The definition includes quantitative risk assessment, which emphasizes reliance on numerical expressions of risk, and also qualitative expressions of risk, as well as an indication of the attendant uncertainties.

**Risk Communication**

- Means the interactive exchange of information and opinions throughout the risk analysis process as regards hazards and risks, risk-related factors and risk perceptions.

- Among risk assessors, risk managers, consumers, feed and food businesses, the academic community and other interested parties.

- Including the explanation of risk assessment findings and the basis of risk management decisions.

**Codex Principles of Risk Management**

- **Principle 1**: Risk management should follow a structured approach.

**Codex Principles of Risk Management**

- **Principle 2**: Protection of human health should be the primary consideration in risk management decisions.

- **Principle 3**: Risk management decisions and practices should be transparent.

- **Principle 4**: Determination of risk assessment policy should be included as a specific component of risk management.

**Codex Principles of Risk Management**

- **Principle 5**: Risk management should ensure the scientific integrity of the risk assessment process by maintaining the functional separation of risk management and risk assessment.

- **Principle 6**: Risk management decisions should take into account the uncertainty in the output of the risk assessment.
**APPENDIX 3**

**Codex Principles of Risk Management**
- **Principle 7:** Risk management should include clear, interactive communication with consumers and other interested parties in all aspects of the process.
- **Principle 8:** Risk management should be a continuing process that takes into account all newly generated data in the evaluation and review of risk management decisions.

**Codex Alimentarius Commission**
- International Body for Risk Management
- FAO/WHO Risk assessment bodies
- Risk assessments – scientific process
  - JEMRA… Joint Expert Meetings on Microbiological Risk Assessment
  - JECFA … Joint Expert Committee on Food Additives
- Outputs of risk assessments considered by Codex Committees and adopted by CAC

**Microbial Risk Assessment**

**Case study - Listeria**
- *Listeria monocytogenes* identified as a foodborne pathogen
- Zero tolerance in some countries
- FAO Expert Consultation
- Codex Committee on Food Hygiene develops risk assessment questions
- FAO/WHO performs risk assessment
- Results considered by CCFH, criteria developed
Summary

- Scientific risk assessments necessary to communicate the risk of illness from foods
- Risk assessments are data and resource intensive
- FAO/WHO risk assessments are important for assisting food safety managers at national level

The actual risk is the issue...

<table>
<thead>
<tr>
<th>Actual Risk</th>
<th>Risk Factor</th>
<th>Perceived Risk</th>
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<td>microbiological contamination</td>
<td>LOW</td>
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<tr>
<td></td>
<td>packaging failure</td>
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<td>food additives</td>
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<tr>
<td>LOW</td>
<td>food irradiation</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

But communication to consumers is vital...

Risk Communication

- International Organizations (FAO/WHO, Codex, WTO)
- National Governments
- Industry
- Consumer and consumer organizations
- Academia
- Media

Risk Communication

- The nature of the risk
- The nature of benefits
- Uncertainties in risk assessment
- Risk management options

Principles of Risk Communication

- Know the audience
- Involve the scientific experts
- Establish expertise in communication
- Be a credible source of information
- Share responsibility
- Differentiate between science and value judgment
- Assure transparency
- Put the risk in perspective
FAO/WHO Development of Scientific Advice

- FAO and WHO offer a neutral, international forum for scientific discussions on food safety and nutrition
- Advice provided by established expert committees (expert bodies) and ad hoc consultations

Issues covered

- Safety assessment of chemicals in food
- Safety assessment of biological agents in food
- Assessment of production technologies for foods
- Human nutrition

Joint FAO/WHO Expert Bodies

- Joint Expert Committee of Food Additives (JECFA) (1956)
- Joint Meetings of Pesticide Residues (JMPR) (1963)

Other expert meetings and ad hoc consultations

- Convened to generate scientific advice or to respond to requests for advice
- All experts are selected on the basis of their expertise and in a personal capacity
- Selection procedures are closely monitored

Scientific advice provided to:

- Codex Alimentarius Commission (CAC) and subsidiary bodies
- Member countries
- Other interested parties – industry, consumer groups, research institutes, etc.

Scientific advice definition:

- The conclusion of a skilled evaluation - taking into account the scientific evidence, including uncertainties (either in the current state of knowledge or adequacy of available data)
APPENDIX 3

**Products of Scientific Advice**

- Risk assessments – chemical or microbiological related to food
- Guidelines and resource documents related to food safety and nutrition
- Risk assessment methodology and international harmonization

**Legal framework and core principles**

- Legal framework for provision of scientific advice is laid down in basic texts of both FAO and WHO

**Core principles include:**

- Soundness – the need for scientific excellence
- Responsibility
- Objectivity – neutrality of both experts and their advice
- Fairness
- Transparency
- Inclusiveness – inclusion of minority scientific opinion

**Procedures for expert bodies and consultations**

- Terms of reference exist for expert bodies or are prepared for consultations
- Rosters of experts available for expert bodies
- Call for experts for consultations followed by selection by joint secretariats
- Call for data

**Communication of Scientific Advice**

Documented in various forms – monographs, technical reports or publication series (for expert bodies) depending on the target audience