



EFSA
Shaping the Future
of Food Safety, Together



Food Safety and Risk Assessment Capacity Building: Educational Cooperation Programmes in Europe

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CHALLENGES

(not ranked, incomplete, still growing)

**Global population growth, Globalized trade,
Diverse market scenarios, Climate change,
Intransparent food & feed chains
Heterogeneous food quality
Food waste problem vs. Securing sufficient food
Antimicrobial resistance, Mycotoxin problem,
Harmonisation of thresholds and methodologies
Fraud, Food adulteration, Consumers literacy
Diet-related diseases**



EFSA
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CONTENT

Four questions

What expertise do we need?

What programmes do exist?

What kind of training is useful?

How can we shape future programmes?

'Ten Commandments for Proper Food Safety Education'






What expertise do we need?

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A green road sign with a white border is mounted on two grey poles. The sign is positioned over a road that stretches towards a horizon under a blue sky with light clouds. The road is flanked by green grassy hills. The sign contains the text: "General aim: ...to be prepared for future scenarios".

**General aim:
...to be prepared for
future scenarios**

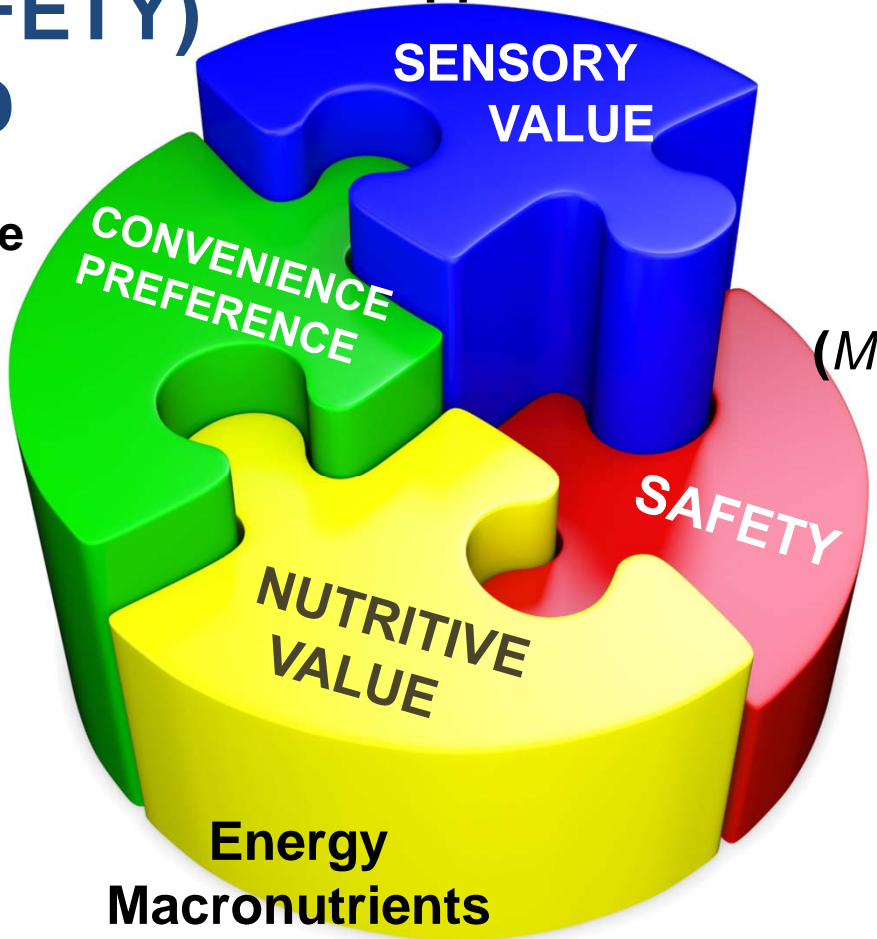
**KNOW * THINK * SHAPE * DEBATE * (RE)ACT
* PREVENT * COMMUNICATE *
STUDY * TRAIN**

1

...to understand
**FUNCTION AND
QUALITY**
(incl. **SAFETY**)
OF FOOD

Experience
Recommendations
Prize, Value for Money
Authenticity
Origin

Taste
Flavour
Texture
Mouthfeel
Appearance



Hazards:
(Micro)Biological
Chemical
Physical
Fraud

Energy
Macronutrients
Micronutrients
Essential Ingredients

2

...to build up KNOWLEDGE about FOOD



HUMIDITY



TEMPERATURE



AIR (OXYGEN)



CONTACT
(PACKAGING,
SURFACES)



WATER ACTIVITY

CARRY OVER EFFECTS

PHYSICAL STRUCTURE

TEMPERATURE

REDOX POTENTIAL

ACIDITY & BUFFERING CAPACITY

ANTAGONISTS

LIVESTOCK AND BREED (TYPE)



CONTACT
(PERSONS)



TIME



ORIGIN

The Knowledge about Food: ...FOOD SCIENCE



MICROBIOLOGY HYGIENE
CHEMISTRY PUBLIC HEALTH
NUTRITION SCIENCE EPIDEMIOLOGY
(VET)MEDICAL SCIENCES CONSUMER SCIENCE
FOOD LAW
TOXICOLOGY QUALITY MANAGEMENT
TECHNOLOGY PROCESS ENGINEERING

...to understand 'CAUSE & EFFECT'

3



Kaoru Ishikawa *)

Hazards
Accidents
Problems

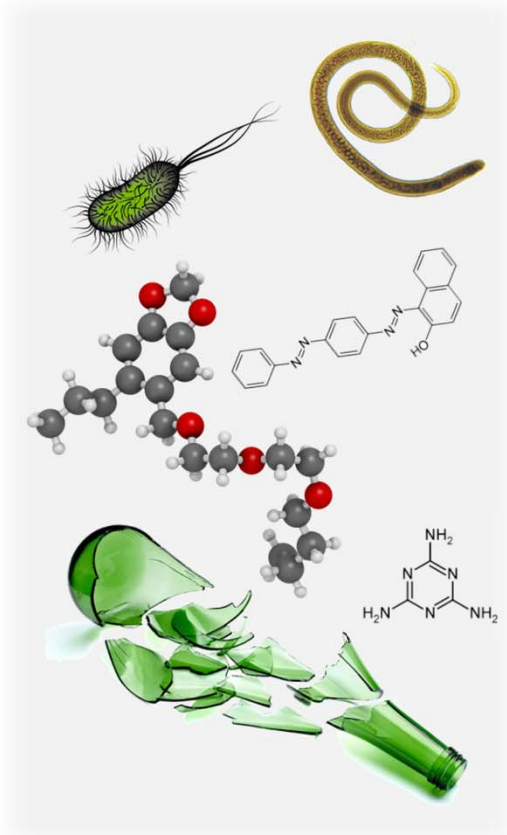
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Outbreak
Damage
Problems
Consequences

- .
- .

*) Further reading: Ishikawa, K.: What is Total Quality Control? Prentice-Hall Inc. Englewood Cliffs, NJ (1985)



LIKELIHOOD ?



WHICH CONSUMER GROUP IS THREATENED ?



See also:
Food Safety Modernization Act: FDA Draft Paper, Feb 2014

...to estimate PROBABILITY



...but how to define thresholds and limits?



**‘Only those who will risk going too far
can possibly find out how far one can go’**

T.S. Eliot (1888-1965)

4

...to understand STATISTICS



ca. **26.000** deaths
per year
on European roads
(... 70 death cases
daily)



Annually
ca. **100** deaths related to
food poisoning
in the EU

5

...to learn from real **CRISES & OUTBREAKS**



Global Outbreak and Response Network (GOARN)

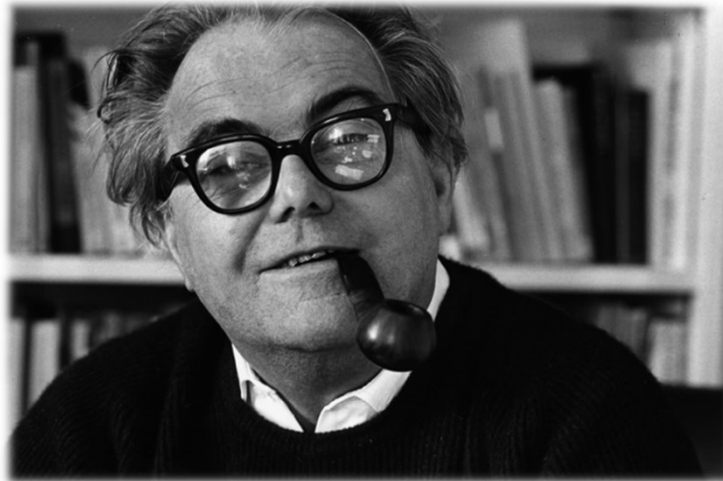


Global platform for food safety data and information for food safety professionals



➔ **EXPERIENCE**

**„A crisis is a productive situation.
You just have to put away the
aftertaste of a disaster!“**



Max Frisch,
Swiss writer, 1911-1991



CRISIS

危机

HAZARD

CHANCE

6

...to communicate **FACTS** and **RISKS**



Criteria like „**quality**“, „**safety**“, „**threats**“ and „**crises**“
are perceived differently by

Experts

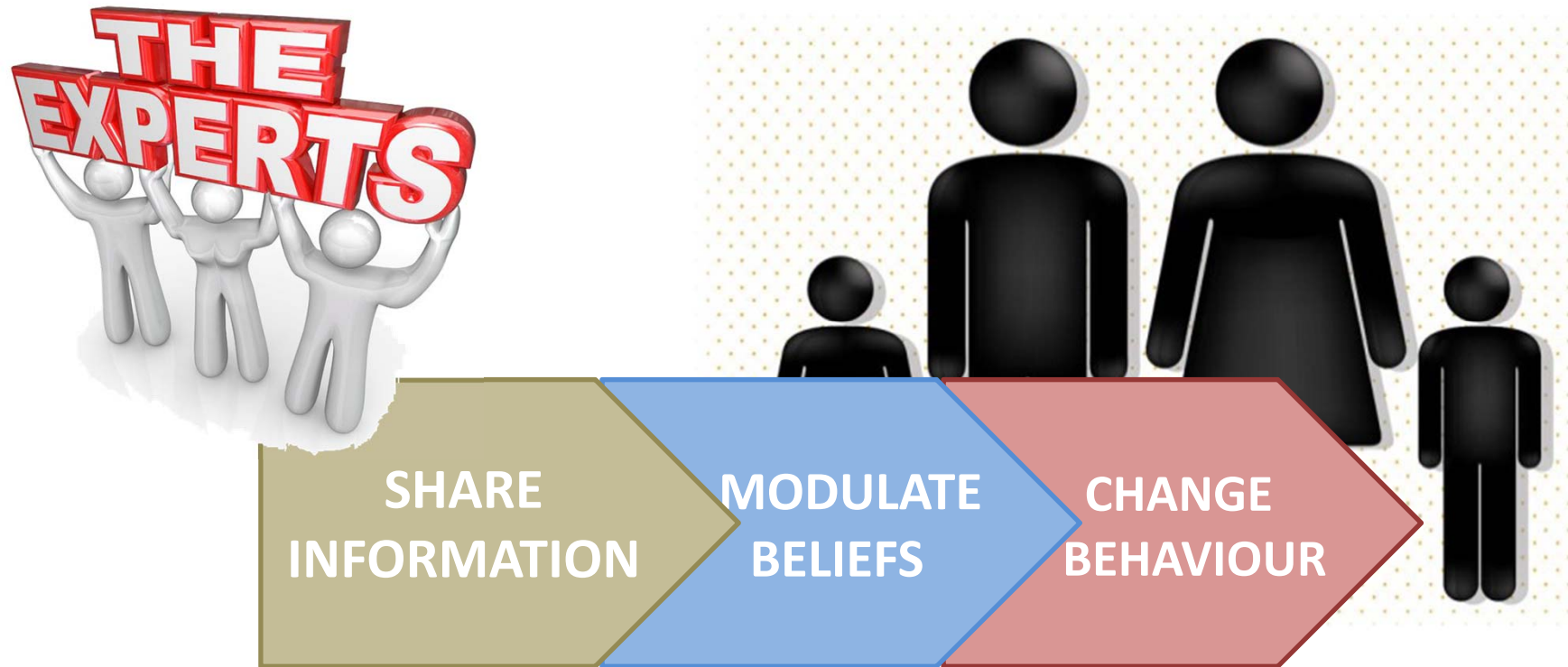


Consumers



- Different knowledge
- Different ranking of hazards
- Different confidence & perception
- **What role can 'Science & Education' play?**

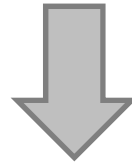
Potential Goals of Risk Communication



Calculated (predicted) Risk *vs.* Perceived Risk

Further reading: Fischhoff et al.: Communicating Risks and Benefits (FDA User's Guide 2011)

To assess and to control food safety,
some broad and interdisciplinary
knowledge is essential



7 to 'digest' the knowledge, create LINKS and NETWORKS





What expertise do we need?

What programmes do exist?

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Study programmes explicitly mentioning 'Food Safety' in their curriculum names

Further information:
<https://www.iseki-food.net/curricula>



Euroleague
FOR LIFE SCIENCES

SAFETY IN THE FOOD CHAIN

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Location: home

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Welcome to the International Master Programme "SAFETY IN THE FOOD CHAIN"



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Major partners:

University of Copenhagen
Københavns Universitet



WAGENINGEN UR

For quality of life

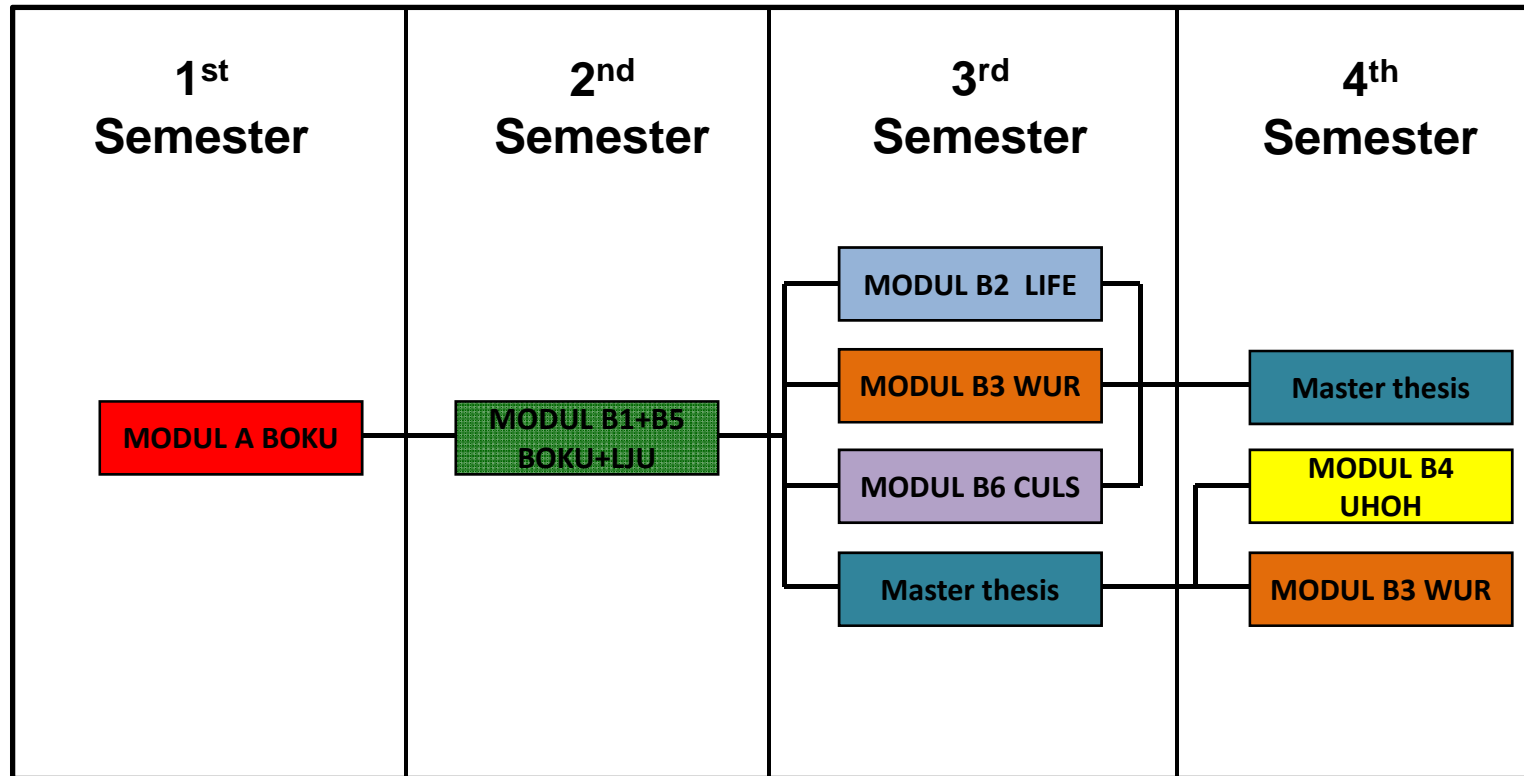


UNIVERSITY OF
LJUBLJANA



CZECH
UNIVERSITY
OF LIFE SCIENCES PRAGUE

Structure of SIFC



Compulsory Courses (Module A)	30 ECTS
Elective Courses in B-Modules	48 ECTS
Free Elective Courses	12 ECTS
Master Thesis (6 months, practical work incl.)	30 ECTS

Duration: 2 years, 120 ECTS

Educational programmes in USA, Canada, Australia, China,...



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Programme Structure/Syllabuses

SYLLABUS FOR THE DEGREE OF MASTER OF SCIENCE IN THE FIELD OF FOOD SAFETY AND TOXICOLOGY

All courses in this programme are compulsory. A candidate shall be examined shortly after the completion of each course.

Postgraduates

- › [Current Students](#)
- › [Research Postgraduate Programmes](#)

2 year programme, 6 core courses with several sub-units and a project study



What expertise do we need?

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8

...to get trained close to reality



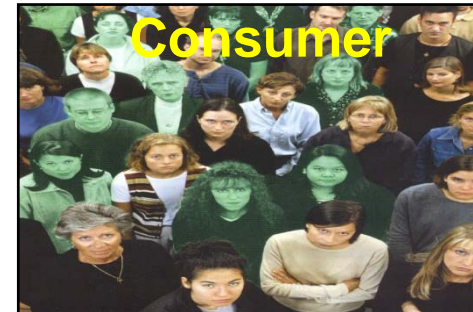
...by simulating incidents

EXAMPLE: Food Safety and Risk Management

Seminar class at 

5 groups

Spokespersons

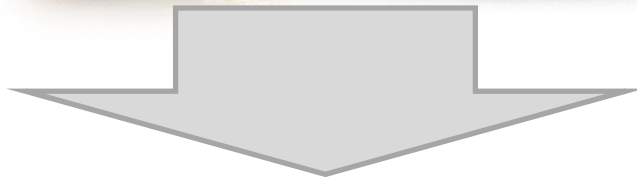


Role play training based on real cases

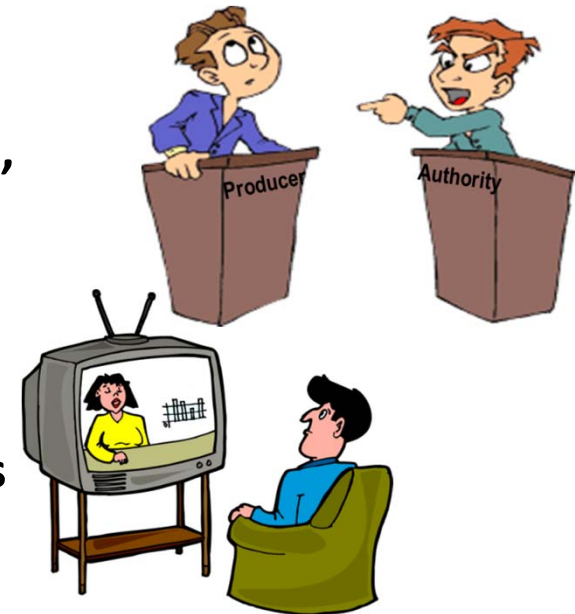


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...to ANALYZE CASES from different perspectives



- Assessment of problem, documentation, scenarios, consequences
- Identification of responsibilities and culprits
- Set precautionary and (if needed) reorganization measures
- Communication and knowledge transfer to experts and to public & media





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10

Set Prerequisites for Future Programmes



**Inter-university comparability of fundamental training
& education in food science at highest level**
Modular training provided where best practice & expertise exists
Versatility, soft and language skills are a must
Traineeship at (inter)national authority is useful
Regional as well as global perspectives are to be covered
**Implementation of curricula at international level
(e.g., joint degrees)**

THANK YOU

FOOD SAFETY

