



***The development of a process for  
the identification and ranking of  
emerging risks in the food/feed  
chain***

Scientific Committee and Emerging Risks Unit

1. What is EFSA ?
2. Emerging risks
3. How to identify emerging risks
4. Results
5. Lessons learnt, next steps



# ***What is EFSA ?***

## Mission

EFSA is the keystone of EU risk assessment regarding food and feed safety. In close co-operation with national authorities and in open consultation with its stakeholders, EFSA provides independent scientific advice and clear communication on existing and emerging risks



## ***Emerging risks***

## REGULATION (EC) No 178/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 January 2002

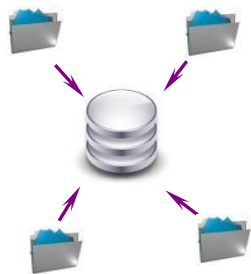
Laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety

### Article 34

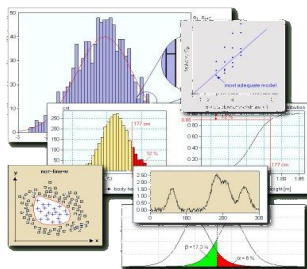
#### Identification of emerging risks

1. The Authority shall establish **monitoring** procedures for systematic searching for, **collecting, collating** and **analysing** information and data **with a view to the identification of emerging risks** in the fields within its mission.

Collecting and collating

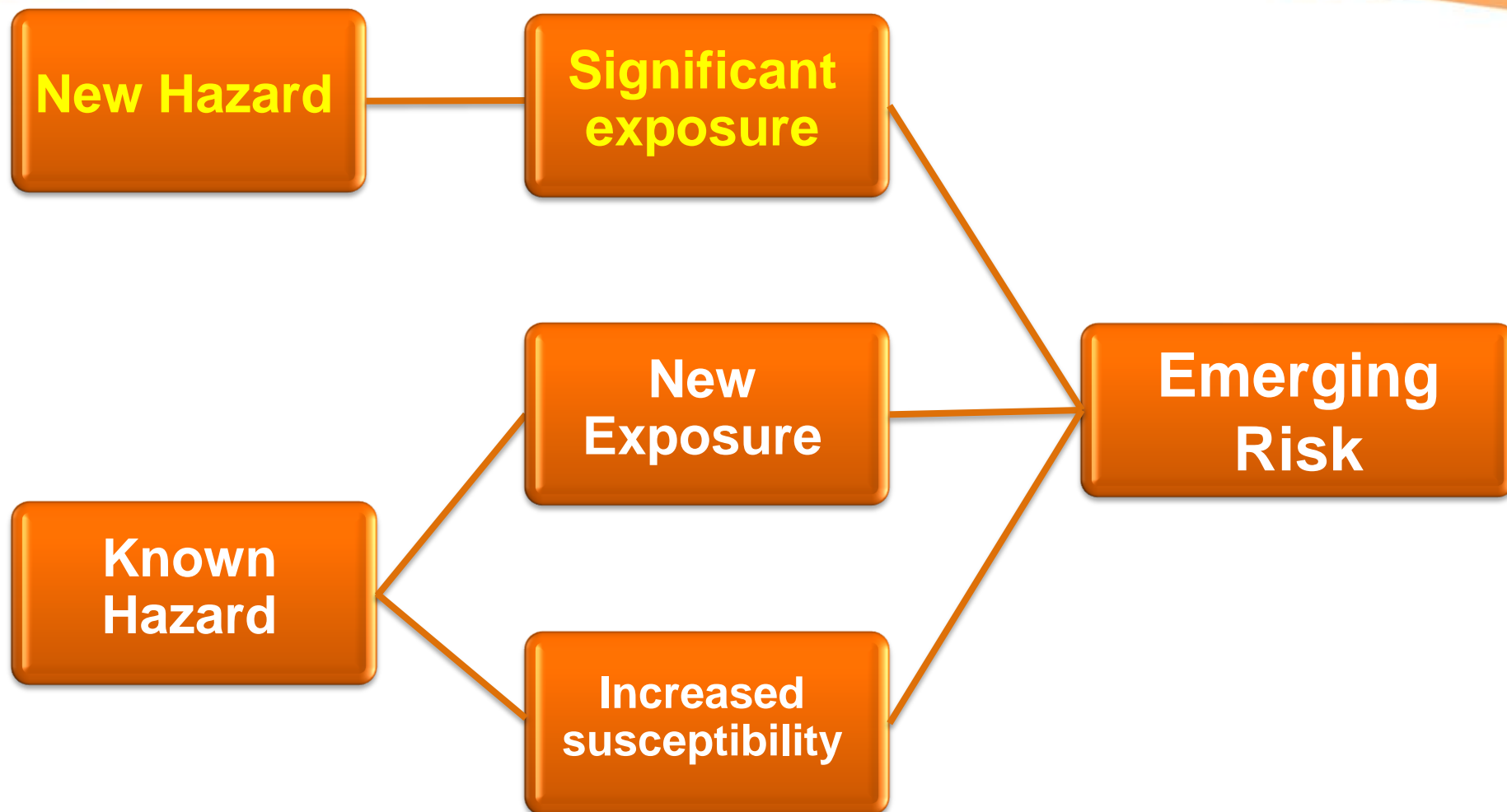


Analyse and filter



sharing

# Definition of Emerging Risk



ESFA, 2007. Definition and description of « emerging risks » within the EFSA's mandate. Statement of the Scientific Committee, 10 July 2007.

# What do we hope to achieve ?

Early identification of new problems (not necessarily incidents or crises), to better anticipate risk assessment needs:

- Research
- Data generation (and methods for doing this)
- Risk assessment methodology development

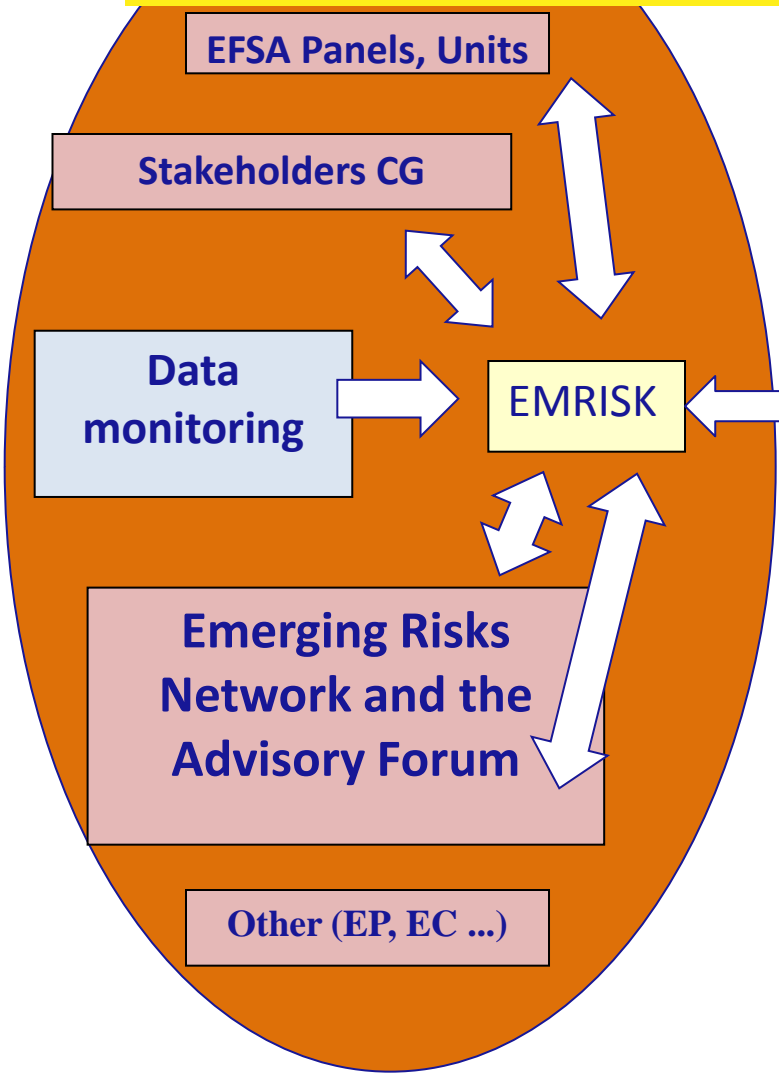




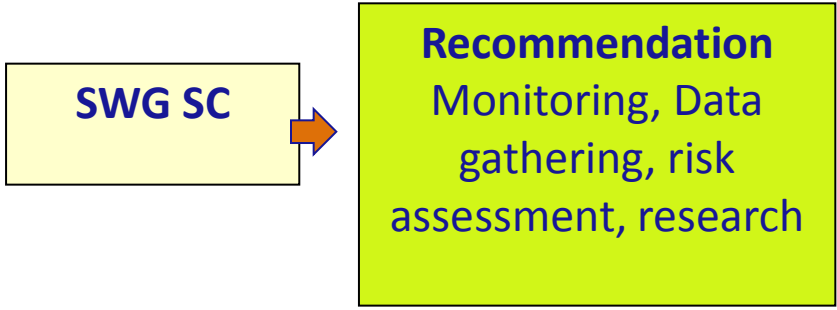
# ***How to identify emerging risks?***

# Emerging risks identification system v2

## Issue generation and data gathering



## Scientific Committee





# ***Results***

# Data analysis and prioritisation of issues

## Signal identification and filtering

75 data sources monitored during the start up phase.

The characterisation of potential signals by five criteria (scored as High, Medium or Low) has been trialed:

- Novelty
- Soundness
- Imminence
- Scale
- Severity

(New hazard, new exposure, changed susceptibility)

## Over 16 months

- Approximately 2200 signals discussed (137/month)
- 158 (7%) potential signals brought to the attention of the primary filter over this 16 month period.
- 25 (1.1%) (1.5/month) **Briefing notes** prepared
- 12 (0.5%) (<1/month) signals judged to be worth follow up.
  - Presentation to the secondary filter

## Over 29 months

- Approximately 80 signals discussed (<3/month)
- 37 (47%) (1.3/month) Briefing notes prepared
- 14 (18%) (0.5/month) signals judged to be worth following up:
  - 6 recurring signals (continued monitoring)
  - Outsourcing, Horizon 2020, Fraud, analysis of drivers, response to MS.

- Description of the issue
- Additional supporting information
- Legal and Institutional aspects
- Evaluation
  - Criteria
- Conclusion
- Questions
- Comments
- Recommendations

## Emerging viruses

Usutu virus;

Oncogenic viruses in food animals;

Foodborne norovirus and older adults;

Zoonotic viruses associated with illegally imported wildlife products;

Schmallenberg virus – could we have been more alert ?

## Emerging parasites

Import of stray dogs

## Emerging bacteria

Drivers and pathways of antimicrobial resistance:

Foodborne ESBL

Salmonella in paan leaves



## Fraud/illegal activities

Combined toxicity of melamine and cyanuric acid;  
Gelatin from China / Indian milk adulteration;  
Use of banned and counterfeit pesticides

## Environmental contamination of the food chain

ECHA's candidate list of substances of very high concern;  
Accumulation of personal care products and pharmaceuticals in crops  
irrigated by reclaimed water

## Consumer/consumption habits/trends

Energy drinks: first results from a vigilance system in Hungary;

Insects for food and feed uses;

Red meat and colorectal cancer

## Natural toxins

Indigenous ciguatera toxin from EU waters

## Technology

Recycled paper (waste management)

Biofuels

## Unknown

Animal illness linked to jerky pet treats



# ***Lessons Learnt, Next Steps***

# Feedback from EFSA Colloquium

- i) Clear **targeted issues/topics** should be agreed prior to the selection of sources of information to be monitored;
- ii) EFSA should fully benefit from the **existing knowledge**, networks and databases available internally, and establish multilateral agreements with member states and inter-governmental agencies to share information;
- iii) When **interpreting and filtering** the information a **multidisciplinary approach** is strongly advisable in order to **interconnect data in a broad context**;
- iv) The use of **creative methods** (e.g. scenarios building) in combination with quantitative empirical data and expert judgment should be used;
- v) When **communicating with risk managers** on emerging risks the terminology used and the assessment provided should be proportionate to emerging issues identified, **avoiding overload of information and unnecessary scares**;

## Difficult !

- Possible future problems vs ongoing risks
- Data scarcity
- Poor understanding (limited knowledge)
- Difficult issues (political, science, social, economic)
- Large uncertainties
- Horizontal (more than usual !)
- Difficult to identify the end user

**Chemical hazards:** evaluation of the REACH list for identifying emerging chemical risks (production volume, use, persistence, toxicity/carcinogenicity, ...)

**Biological hazards:** A systems approach. Starting from drivers, identify potential hazards, exposure scenarios, consequences. Exploring the use of expert elicitation processes (Delphi, General Morphological Analysis)

## Finished

- Climate change on mycotoxin production in European cereal crops
- Food prices, and trends in food trade
- Energy drinks – consumption data
- Omics Technologies

## Ongoing

- Chemical mixtures
- Non-monotonic dose response
- Human biomonitoring
- Bee Health

<http://www.efsa.europa.eu/en/publications.htm>



Thank you very much for your attention!