SAFE FOODS

• Type of Project: Integrated Project
• Project title:

Promoting Food Safety through a New Integrated Risk Analysis Approach for Foods

• Coordinators: Dr. H. A. Kuiper and Dr. H.J.P. Marvin

• Total budget: 14,5 €
• EU contribution: 11,4 €
• Number of partners: 32
• Number of countries involved: 17

www.safefoods.nl
Promoting Food Safety through a New Integrated Risk Analysis Approach for Foods
The Food Debate!

- Administrators
- Politicians
- Experts
- Media
- Scientists
- Industry
- Consumers
- Action Groups
Strategic Objectives

• To design a European working-procedure for early identification of emerging risks in food production chains in an expanding European market.

• To develop comparative safety assessment approaches for foods produced by different breeding and production practices

• To further develop probabilistic methods to assess exposure of humans to (mixtures of) food contaminants and to set up databases
Strategic Objectives

• To investigate consumers confidence and preferences in risk analysis practices for foods.

• To investigate the new role of institutions involved in food risk assessment and management taking a broader impact on environment, animal welfare, sustainability, and socio-economics into account.

• To design a new risk analysis approach for foods, integrating scientific principles, societal aspects and effective public participation.
SAFE FOODS

Risk Analysis Framework

Risk Assessment
- Hazard identification
- Hazard characterization
- Exposure assessment
- Risk characterization

Risk Management
- Assess policy alternatives
- Select and implement appropriate options

Risk Communication and Stakeholder Involvement
Interactive exchange of information and opinions

Increased transparency = increased credibility?

Incorporation of societal “values” to create an integrated framework

(after WHO, 1998)
SAFE FOODS

Comparative Safety Evaluation of Breeding Approaches and Production Practices Deploying High - and Low- Input Systems

Early Detection of Emerging Risk Associated with Food and Feed Production

Quantitative Risk Assessment of Combined Exposure to Food Contaminants and Natural Toxins

Investigation of the Role of Regulatory Institutions in Risk Management

DESIGN OF A NEW INTEGRATED RISK ANALYSIS APPROACH FOR FOODS

Management, Coordination and IPR

Dissemination and Training

Consumer Confidence in Risk Analysis Practices Regarding Novel and Conventional Foods
SAFE FOODS

- Comparative Profiling Analysis
- History of Safe Use
- New Risks in Expanding Markets
- Capacity Building
- Probabilistic/Deterministic Risk Assessment
- Comparative Assessment Quantify Uncertainties
- New Approaches for Systemic Risk Analysis
- Non-Static Process Adaptation
- Integrated Science-Based Systemic Risk Analysis Model
- Consumer Confidence/Preference Value Judgement Risk Acceptability Precaution
- Stakeholders Dialogue Communication Training

- RIKILT Institute of Food Safety
Recent Developments

- European Food Safety Authority (EFSA) ([http://www.efsa.eu.int](http://www.efsa.eu.int)) is in full operation.
- Scientific Panels have produced more than 200 Opinions on a wide range of food safety related issues put forward by the Commission, Member States, or on own initiative.
- Strategic Guidance Documents on risk assessment of food safety issues have been produced.
- First evaluation of EFSA by stakeholders is positive, but EFSA has still to gain as an independent authority.
Recent Developments

- Broad support to install an EFSA Stakeholders Consultative Committee (Stakeholders meeting November 2004, Berlin)
- EFSA should become more involved in work on nutrition and obesity
- Stronger collaboration between EFSA and the European Commission for a more coherent risk communication and risk management
- Network between EFSA and Member States need further strengthening
THROWING CAUTION TO THE WIND

A review of the European Food Safety Authority and its work on genetically modified foods and crops.

November 2004
1. The GMO Panel of EFSA has not made a good start. It has published twelve scientific opinions, virtually all favourable to the biotechnology industry.

2. Some of the scientists on the GMO Panel are known to have pro-GM views. Nearly a third of the Panellists are involved in the approval of GMOs at a national level and so have to remove themselves from decision making.

3. Some of the Panellists have been involved in an EU funded project (ENTRANSFOOD) with the biotechnology industry to agree safety assessment, risk management and risk communication procedures that would “facilitate market introduction of GMO’s in Europe”.
4. When considering applications for new GM foods or feeds, the GMO Panel has consistently dismissed the concerns of other scientists. It appears to be less precautionary than Member States.

5. The Panel ignores EU requirements to identify the level of uncertainty in its assumptions, and fails to take in legal requirements that regard is given to the long term effects of eating or growing GM foods.
Lille Conference on Integration of Safety and Nutrition Research

Under the Auspices of the European Commission
Institut National de la Recherche Agronomique
and Société Scientifique d’Hygiène Alimentaire
organise an International Conference

“Integrating Safety and Nutrition Research along the Food Chain: The New Challenge”
Lille, October 27, 28 and 29, 2004.

Among the Lille Topics

- New instruments in FP6: “The retour d’expérience”
  - Jestin André; AFSSA (France)
    MED-VET-NET; Network of prevention and control of zoonoses
  - Kuiper Harry; RIKILT (The Netherlands)
    SAFE FOODS; Promoting food safety through a new integrated risk analysis approach for foods
Presentation of Current EU funded Research

- Session 1. Microbiological risks in the food chain: bacteria, viruses, parasites,…
- Session 2. Chemical risks in the food chain: contaminants, ingredients and additives, novel foods..
- Session 3. Nutritional benefits and risk communication in the food chain.
- Session 4. Detection and traceability in the food chain.
Gaps and Suggestions for FP7

• Gaps and areas for continuation

• Expected evolution and emerging challenges

• Emerging and remerging issues and risks
Possible Themes for FP7

- Integration across disciplines (merging tools or models)
- Consolidating the Farm to Fork approach
- Consumers’ roles in choosing healthy diets
- Contribution of new technologies –omics, nanotechnologies, bio-informatics
- Risk analysis trilogy (in particular the assessment and communication-perception)
- Needs for methods, standards, and guidelines
- Bio-attacks and bio-security
- Low-dose and long-term effects and combined exposure related questions
- Personalised diets: what’s maybe potentially ongoing must be continued
- Importance of the cost and risk-benefit approach
Characteristics of the New Risk Analysis Model

- Integration of the scientific assessment of human health aspects of foods with consumer values.
- Active consumer participation in the various stages of the risk analysis process.
- Improved functional and structural risk management procedures.
- Improved risk communication with consumers throughout the process of risk analysis.
- Pan European applicability.
Inclusion of New Quality of Life Criteria in the Risk Analysis Process

- Human physical and psychological health
- Animal welfare
- Environmental impact
- Benefit considerations
- Acceptability, cultural attitudes
- Socio-economical impact
- Essential part of the risk assessment or in addition?
Focus of SAFE FOODS on the New Risk Analysis Model

Identification of relevant stakeholders in risk-benefit analysis of food safety and nutrition issues
Evaluation and use of new methods for risk assessment of food safety/nutrition issues (probabilistic, genomics, profiling methods)
Identification and insertion of Quality of Life Parameters in the risk-benefit analysis of food/food production systems
Focus of SAFE FOODS on the New Risk Analysis Model

Analysis of risk problems (complexity, uncertainty, ambiguity) and consequences for risk management
Stakeholders participation in the various phases of the risk analysis process
Inclusion of economical factors in the risk analysis process illustrated by cases to be identified by WP4
Criteria and strategies for risk-benefit analysis of new foods/food production technologies
Food Risk Analysis Process

Hazard Alert Phase

1

Producers
Risk managers
Scientists
NGOs

Risk Characterization

2

Scientists
Other Stakeholders as Observers?

Risk Management

3

Risk managers
Specialized organizations
Policy makers
Science communicators

4
Food Risk Analysis Process

Hazard Alert Phase

1. Producers
   - Risk managers
   - Scientists
   - NGOs

2. (Early) Warning Signals / Systems
   - Other Stakeholders as Observers?

3. Risk Management
   - Risk managers
   - Observers
   - Specialized organizations
   - Policy makers
   - Science communicators

Risk Characterization

3. Risk Characterization
   - Risk managers
   - Observers
   - Specialized organizations
   - Policy makers
   - Science communicators

Risk Management

3. Risk Management
   - Risk managers
   - Observers
   - Specialized organizations
   - Policy makers
   - Science communicators

4. Risk Management
   - Risk managers
   - Observers
   - Specialized organizations
   - Policy makers
   - Science communicators

4. Risk Management
   - Risk managers
   - Observers
   - Specialized organizations
   - Policy makers
   - Science communicators
Food Risk Analysis Process

**Hazard Alert Phase**
1. Producers
2. Risk managers
3. Scientists
4. NGOs

**Risk Characterization**
2. Producers
3. Risk managers
4. Scientists
5. NGOs

**Risk Management**
3. Producers
4. Risk managers
5. Scientists
6. NGOs

**Stakeholders as Observers?**
- Specialized organizations
- Policy makers
- Science communicators

**Problem Formulation**
Food Risk Analysis Process

Hazard Alert Phase

1

2

3

4

Risk Characterization

Risk Management

Organization

Risk Analysis and Management Process

Producers

Risk managers

Scientists

NGOs

Specialized organizations

Policy makers

Science communicators

Observers

Observers as Observers
Food Risk Analysis Process

Hazard Alert Phase

1. Producers
2. Risk managers
3. Scientists

Risk Characterization

1. Other Stakeholders as Observers?
2. (Comparative) Compositional Analysis (Profiling Methods)

Risk Management

1. Science communicators
Food Risk Analysis Process

Hazard Alert Phase

1

Producers
Risk managers
Scientists
NGOs

Risk Characterization

2

Scientists
Other Stakeholders as Observers?

Risk Management

3

Hazard Identification and Characterization

4

Specialized organizations
Risk managers
Policy makers
Science communicators

Risk characterization
Food Risk Analysis Process

Hazard Alert Phase

1

Producers
Risk managers
Scientists
NGOs

Risk Characterization

2

Scientists
Other Stakeholders as Observers?

Risk Management

3

Intake or Exposure Assessment (Probabilistic Modelling)

4

Science communicators
Food Risk Analysis Process

Hazard Alert Phase

1

Producers
Risk managers
Scientists
NGOs

Risk Characterization

2

Scientists
Other Stakeholders as Observers?

Risk Management

3

New Standard Setting

4

• Profiling
• Probabilistic

Communicators
Food Risk Analysis Process

Hazard Alert Phase

Risk Characterization

Risk Management

Producers
Risk managers
Scientists
NGOs

Scientists
Other Stakeholders as Observers?

Integrated
Toxicological, Nutritional, and Environmental Evaluation

Risk managers
Specialized organizations
Policy makers
Science communicators

communicators
Food Risk Analysis Process

Hazard Alert Phase

Risk Characterization

Risk Management

1

2

3

4

Integrated Risk Characterization and Uncertainty Analysis

 Scientis

Risk managers

Specialized organizations

Observes

Policy makers

Science communicators
Food Risk Analysis Process

Hazard Alert Phase

1

Risk Management
• Accepted Risk Levels
• Benefits
• Controlability / Mitigation
• Post-Market Surveillance
• Conditions
• Perception

Risk Characterization

2

Risk Management
• Accepted Risk Levels
• Benefits
• Controlability / Mitigation
• Post-Market Surveillance
• Conditions
• Perception

Risk Management

3

Risk Management
• Accepted Risk Levels
• Benefits
• Controlability / Mitigation
• Post-Market Surveillance
• Conditions
• Perception

Risk Management

4

Risk managers
Specialized organizations
Policy makers
Science communicators

Risk managers

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Policy makers
Science communicators
Food Risk Analysis Process

Hazard Alert Phase

Risk Characterization

Risk Management

1  2  3  4

Systemic Risk Management

- Sustainability
- Economics
- Social impact
- Precautionary measures

Risk managers
Specialized organizations
Observers
Policy makers
Science communicators

Producers
Risk managers
Scientists
NGOs
Other stakeholders as observers?
Food Risk Analysis Process

Hazard Alert Phase

1

Producers

Risk managers

Scientists

NGOs

Measures on Monitoring and Surveillance

Risk Characterization

2

Stakeholders as Observers?

Risk Management

3

Risk managers

Specialized organizations

Policy makers

4

Science communicators

Other Stakeholders
Food Risk Analysis Process

Hazard Alert Phase
1

Risk Characterization
2

Risk Management
3

Decision-making

Producers
Risk managers
Scientists
NGOs

Other Stakeholders as Observers?

Specialized organizations
Policy makers
Science communicators
Build the Model further on

- FOSIE: Food chemicals and contaminants
- ENTRANSFOOD, FAO/WHO: Foods from GM Plants
- FAO/WHO: Foods from Transgenic Animals
- EU Scientific Committee Reports 2002, 2003
- EU Project Risk perception and Risk communication
- EU Project Consumer attitudes and decision making regarding GM foods
Questions

• Is the segmented model effective for all different food types and food producing technologies?

• **Who** are the stake holders and **where** and **how** should they be involved in the risk analysis and management process

• What communication models and strategies should be developed for an improved stakeholders participation?

• Which cases to develop and test the Model??
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New Integrated Risk Analysis Approach