Developing Consumer Trust in Food risk Analysis. Implications for Food Choice

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Overview

• The key questions which need to be asked
• Differences in expert and consumer opinion
• What determines good food risk management from a consumer perspective?
• Communication about risk management practices on consumer confidence
• Effects of risk and benefit information on public perceptions of risk
• Policy implications, conclusions and future research issues
Public perceptions and attitudes – key questions

What is driving consumer perceptions of risk and benefit?
Who trusts whom to inform and regulate?
Are there cross-cultural and intra-individual differences in perceptions and information needs?
How might the wider public be involved in the debate about risk management and technological development?
How do the public react to information about risk uncertainty and risk variability, and emerging risks?
Focus Groups: consumers and experts

- **Consumers & Experts**
  - N=108; Denmark, Greece, Germany, UK, Slovenia
  - Consumers: perceptions of how well risks were managed & trustworthiness of different actors
  - Experts: extent they agreed with consumer statements related to food risk management concerns

- **Follow-up Telephone Interviews**
  - N=71; Denmark, Greece, Germany, UK, Slovenia
  - Consumers were presented with expert statements on food risk management and experts were asked to respond to several consumer statements

Van Kleef et al, 2007 Risk Analysis
Krystallis et al, 2007, Health, Risk & Society
### Consumers & Experts: A Perceptual Divide

<table>
<thead>
<tr>
<th>Consumers</th>
<th>Experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor quality of information</td>
<td>Consumers not willing to seek information</td>
</tr>
<tr>
<td>Continuing problems</td>
<td>Adequate FRM and happy consumers</td>
</tr>
<tr>
<td>Less acceptance of economic interests</td>
<td>More acceptance of economic interests</td>
</tr>
<tr>
<td>Emphasise consumer protection</td>
<td>Emphasise state and industry</td>
</tr>
<tr>
<td>Positive view</td>
<td>Negative view - create public anxiety</td>
</tr>
<tr>
<td>Not acknowledged by all institutions</td>
<td>Inherent in science</td>
</tr>
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#### Notes

- FRM: Food Risk Management
- FRM Efforts
- FRM Priorities
- Responsibility
- Media
- Uncertainty

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Krystallis et al., 2007, *Health, Risk & Society*
What determines good food risk management from a consumer perspective?

- Communication priorities
  - Proactive consumer protection
  - Transparent risk management
  - Transparent risk assessment and risk communication practices, including communication of uncertainties
  - Trust in expertise of food risk managers
  - Trust in honesty of food risk managers

Van Kleef et al, 2007, Risk Analysis
Survey: Quantitative Results

Van Kleef et al, 2007, Risk Analysis
Replication of survey outside European Union

• Russian Consumers (N=420)

• Generally, Russian consumers hold similar views to consumers in EU member states regarding their perceptions of what constitutes effective food risk management practices

• *Perceived honesty* of food chain actors was an important determinant of perceived food risk management quality

• Russian consumers perceived *personal responsibility* for food-related health protection.

• EU consumers attributed responsibility to *food chain actors* and the *authorities*.

*Popova et al, in press. British Food Journal*
Survey: Summary of results

• Factors of universal importance within the EU
  • Pro-active consumer protection
  • Transparent risk management
  • Trust in the expertise of food risk managers (except Greece)

• Factors of local importance
  • Scepticism regarding risk assessment and communication practices (UK)
### Case Studies: Overview

#### Semi-structured interviews

<table>
<thead>
<tr>
<th>Cases (N=206)</th>
<th>“Crisis” incident</th>
<th>Low impact incident</th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>BSE</td>
<td>Nematodes in fish</td>
</tr>
<tr>
<td>Norway</td>
<td>E.coli</td>
<td>Salmon</td>
</tr>
<tr>
<td>UK</td>
<td>BSE</td>
<td>Salmon</td>
</tr>
<tr>
<td>Greece</td>
<td>Avian influenza</td>
<td>Yogurt/ Honey</td>
</tr>
</tbody>
</table>

Van Kleef et al, in press, *Health Risk and Society*
Case studies – conclusions

- *Preventative* risk management measures important
- *Transparency* in risk analysis
- Communication of *uncertainty* and *variability*
- *Expertise* is essential component of effective risk management
- *Emphasis on rapid responses* to contain food safety incidents if they occur
- Communication of actions taken to *improve future consumer protection* (institutional learning and preparedness)
Communication about risk management practices on consumer confidence

**Regulatory enforcement**
Consumers perceive risks to be well managed when they perceive
- Measures for controlling risks are in place
- Risks are perceived to be managed proactively

**Trust**
Consumers trust the authorities when they communicate
- Uncertainty
- Variability

**Hazard type**
- Trust higher for *natural* hazards
- Trust lower for *technological* hazards

Houghton et al., 2006, van Kleef et al., 2006
Information experiments: experimental design

- Representative sample of consumers
  - Germany (n=1,796)
  - Greece (n=1,604)
  - Norway (n=2,273)
  - United Kingdom (n=2,279)
Independent variables

- Hazard type *(Mycotoxins, GM potato, Pesticide Residues)*
- Proactive risk management implemented *(Yes/No)*
- Regulatory enforcement *(Yes/No)*
- Uncertainty acknowledged *(Yes/ No)*
- Population level variability acknowledged *(Yes/No)*

Van Dijk et al. 2008, appetite
Information experiments: aggregated cross-national data

- Mycotoxins perceived as a natural rather than artificial hazard?

\[ F(2,2146) = 3.84, \ p = .022 \]

Repeated measures mixed linear model
Impact of communication about risks and associated Food risk management practices depends on

- *cultural context*
- *hazard characteristics*
Risk-Experiment: Prior Attitudes

Four technologies selected based on existing consumer attitude

- Conventional
- Nanotech
- Organic
- GM

Positive

Negative
Attitudes to food production technologies

- **Strongly held attitudes, difficult to change**
  - Genetic modification (very negative)
  - Organic production (very positive)
  - Conventional production (negative)

- **Ambivalent attitudes, amenable to influence by whatever information becomes available**
  - Nanotechnology
Food Risk Management Policy Implications

Risk communication messages should address...

- Ongoing *risk management* and *research* activities

- *Preventative programs* and *proactive* risk management efforts to detect and mitigate emerging risks

- Selection of food risk managers according to *expertise* and *value similarities*
  - *health protection* versus *economic* interests

- Transparency regarding *regulatory priorities*

- *Scientific uncertainty* and *variability*

- Information on the performance of *enforcement* of systems
Risk Communication Messages

- Based on an expert understanding of consumer preferences, requirements, and concerns

- Transparent and consistent across institutions

- Targeted to those at-risk or interested individuals to avoid “information overload”
Risk Communication Messages

• **Customize messages** to
  - consumer preferences
  - cultural environments
  - experiences with previous incidents
  - past performance of local institutions

• Examine whether an *isolated number of approaches* can be identified to coordinate risk communication across different countries
SAFE FOODS Risk Analysis Framework

- Should stakeholders be involved?
- Which stakeholders?
- Involvement in what way?

Risk Management
- Decision-making
- Assessment of management options
- Choice of action
- Implementation & Monitoring
- Control of implementation
- Enforcement

Risk (benefit) communication
- Include health impacts of both risks and benefits?
- Assess, economic, social, environmental, ethical impacts?

Risk/Benefit Assessment
- Health Assessment

Who does what?
- Risk Assessors
- Risk Managers

- Transform risk communication, to focus on preferences the public and thereby improve transparency?
- Include information about uncertainty

Evaluation
- Overall assessment
- Uncertainty of distributions of risks and benefits
The case of fish consumption – Variability....

Although a rich source of n-3 polyunsaturated fatty acids (PUFAs) that may confer multiple health benefits, some fish contain methyl mercury (MeHg), which may harm the developing fetus.

U.S. government recommendations for women of childbearing age are to modify consumption of high-MeHg fish, while recommendations encourage fish consumption among the general population because of nutritional benefits”

….and uncertainty

“Long –chain fatty omega -3 fatty acids found in fatty fish and fish oils do not have a clear effect on total mortality, combined vascular events, or cancer”

Hooper et al, British Medical Journal, March 2006
Effects of risk and benefit information on public perceptions

Framing:
- Losses (e.g. DALY) have greater impact than gains (QALY) (Kahneman and Tversky, 1979).
- People weigh risk information as more important than benefit information.
- Impact of balanced information higher on risk perception than on benefit perception (Fischer and Frewer, accepted; van Dijk et al., submitted).
Emerging issues in communication

- **Risk – benefit** communication and impact on risk-benefit perception
  - Uncertainty associated with both risks and benefits

- Targeted communication to vulnerable populations
  - Fish consumption
  - Functional foods

- Communication about emerging food risks in globalizing food chains
  - Cross-cultural differences in information preferences
  - Risk management as well as hazard characteristics
  - Nanotechnology in the agri-food sector
Thank you!
Any questions?