

Economics of animal-derived food – costs and benefits in a global market

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Overview

- Economics for beginners
- Trade policy options and frameworks
- Examples
- Conclusions

Economics of animal diseases for beginners

- **Economics** = Analysis of production, distribution and consumption of goods and services
- **Economic value** = Benefit gained by individual and society as a result of consuming animal-derived food created by transformation of resource.
- **Economic cost** = Loss of economic value due to disease for individual and society.
- **Production or output loss** = Unplanned reduction in the quantities of animal goods from a given quantity of resource input, or its monetary equivalent.

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The global market

- Food value chain = Strategic partnership between businesses to progressively create value for consumers and for a collective competitive advantage.



Risks and benefits of global food trade

Risks	Benefits
Animal health risks	Access to larger, high-price markets
Public health risks	Food security (volume, safety, nutritional value)
Adulteration along complex chains	Food diversity
Delayed intervention during outbreaks due to complex food value chains	Annual resilience of supply
Food losses during transport, spoilage	Lower prices
Environmental risks	Environmental benefits
Competition for domestic producers	

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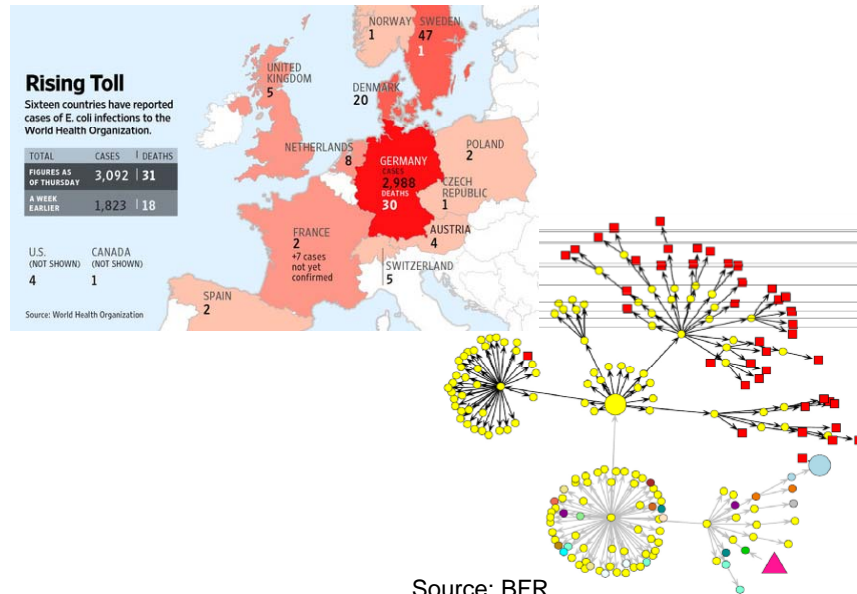
Dioxin

- Hazard
 - Organic compounds, produced by combustion (natural and man-made)
 - Environmental pollutants, toxic effect, accumulation in fat tissue along food chain
- Irish dioxin crisis
 - Contamination of pork, beef (2008) and milk (2009) via animal feed produced by one manufacturer
- Recall
 - Affecting pork supply of 23 countries
- Risk communication by EFSA



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E. coli in sprouts 2011



Trade policy options

- Free trade
- Restricted trade
 - Import restrictions, checks, audits
 - Tariffs
 - Technical barriers
 - Export restrictions
- Non-tariff trade distortions
- Bilateral trade agreements
- Multi-lateral trade agreements, regionalism
 - European Community
 - ASEAN, APEC, NAFTA, ...

World Trade Organisation

- www.wto.org
 - Principle of free trade (1995)
 - 153 member countries
 - Based in Geneva
- Trade with animals, food and plants
 - Principle of free trade
 - Potential risk to human, animal and plant health
- SPS agreement
(Sanitary and Phytosanitary Agreement)
- Dispute settlement



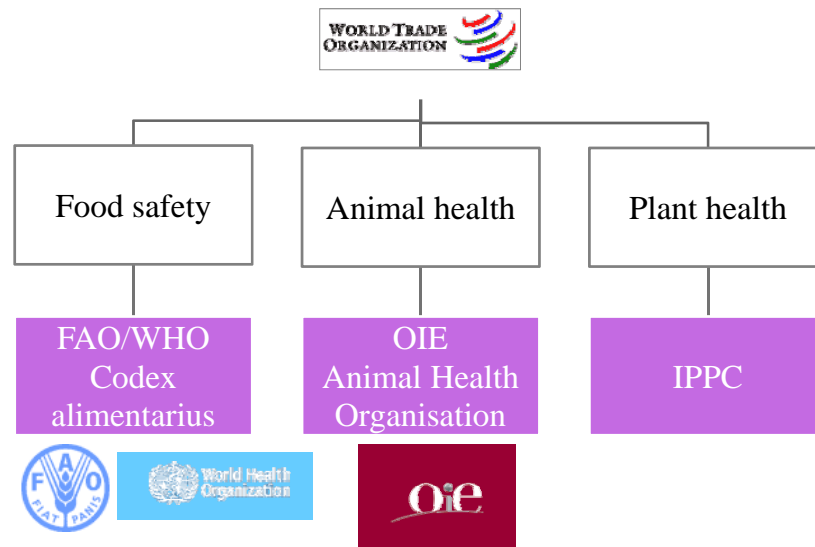
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Principles of the SPS Agreement

- Importing country
 - Right to stop trade if
 - » Risk to health of humans, animals and/or plants
 - » To be shown using scientific method (i.e. risk analysis)
 - Right to introduce emergency measures
 - Appropriate level of protection
- Exporting country
 - Right to appeal
 - WTO dispute settlement panel

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Organisations and standards



Role of risk analysis

Risk = The probability of an undesired event and the consequences of an undesired event



12

Economic consequences of BSE

- Formal assessments made for several countries
 - Canada
 - Germany 1.9-2.1 billion €
 - UK 3.5 billion £

Russia to lift 26-year ban on British beef and lamb

Russia has agreed to lift a 26-year ban on importing British beef and lamb, its government has said.

British farmers had been prevented from exporting to the Soviet Union, and later Russia, following the first BSE outbreak in 1986 in the UK.

Russia kept the ban despite it being lifted worldwide in 2006.



British cattle were banned for 15 years in Russia due to fears about the BSE disease

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Example: BSE

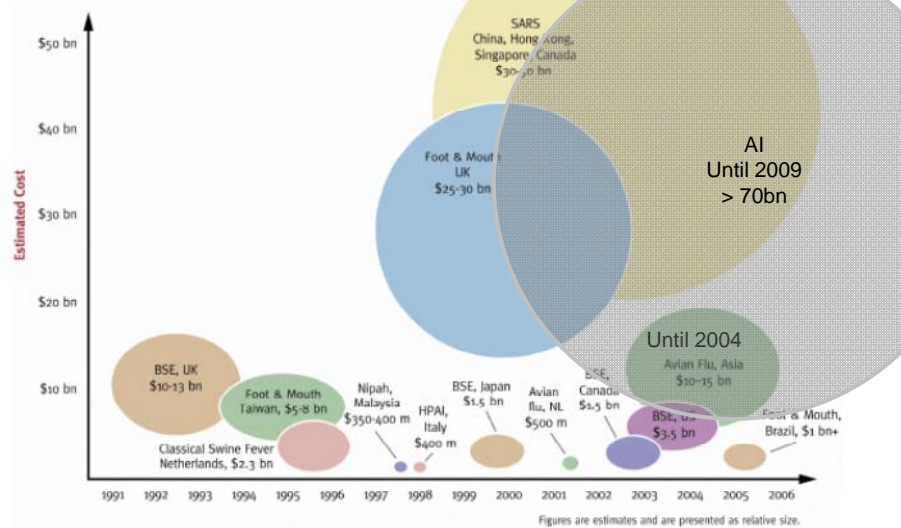
- Lead OIE
- Country risk assessment
 - Release
 - Risk management measures
 - Surveillance
- Three categories
 - Negligible
 - Controlled
 - Undetermined
- Regular updating

Surveillance subpopulation			
Routine slaughter ¹	Fallen stock ²	Casualty slaughter ³	Clinical suspect ⁴
Age ≥ 1 year and <2 years			
0.01	0.2	0.4	N/A
Age ≥ 2 year and <4 years (young adult)			
0.1	0.2	0.4	260
Age ≥ 4 year and <7 years (middle adult)			
0.2	0.9	1.6	750
Age ≥ 7 year and <9 years (older adult)			
0.1	0.4	0.7	220
Age ≥ 9 year and <2 years (aged)			
0.0	0.1	0.2	45

www.oie.int

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Costs of Disease Outbreaks



Source: Bio Economic Research Associates paper on the *Economic Risks Associated with an Influenza Pandemic*, presented to the United States Senate Committee on Foreign Relations, November 9, 2005

15

Use of hormones in beef production

- EU import ban 1988
- Dispute settlement mechanism (Canada, USA)
- WTO ruled against EU 1997
- [USA bans import of EU beef due to BSE]
- Ruling upheld in 2004
- EU import quota increased 2012 as part of wider trade negotiations
- Costs 0.2 billion €

Private standards

- Additional requirements made by purchasing companies, may require formal certification
- Examples of private standards
 - ISO22000, Global Food Safety Initiative (GFSI)
- Status EU
 - Commercial agreement between voluntary partners
 - Supplier certifies that product complies
 - Not subject to regulatory intervention
- But it may be costly...
- Discussion ongoing in all trade bodies related to trade

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Facilitation of trade: Obtain benefits while managing risks

- Needs
 - Quantification of risks and benefits
 - Including economic aspects
- Competency in economics of animal health
 - Awareness
 - Training, collaboration
 - Also see www.neat-network.eu
- Networking to enhance the use of economics in animal health education, research and policy making in Europe and beyond

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A first example...

- ZooGloW (Zoonoses and Food Safety along Global Supply Chains), BfR, Berlin
- “Within the scope of economic analysis, the costs and benefits of expanded food monitoring are weighed up against the costs incurred by the national economy in the event of a crisis. The changed behaviour of the population in the event of a disease outbreak due to food is also an aspect of economic observation”

