

# Methodologies for assessment of regulations for food safety

Gerhard Schiefer  
International Center for Food Chain and Network Research  
University of Bonn

# Food Safety Challenge

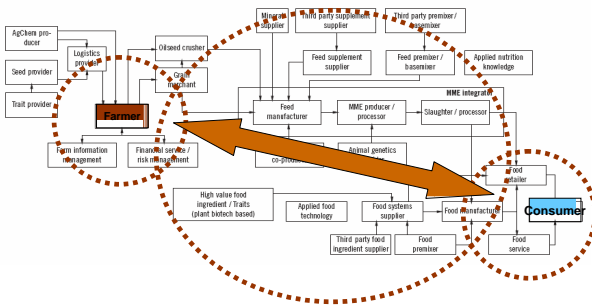
How to remain:  
→ Competitive  
→ Sustainable  
→ Responsible

Regulations?

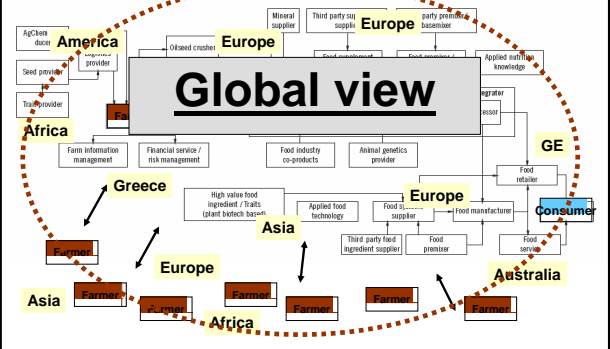


Privat Sector Initiatives?

## An integrated view of the agri-food sector



## An integrated view of the agri-food sector



## Chain challenges

Globalization, industrialization

ETPs

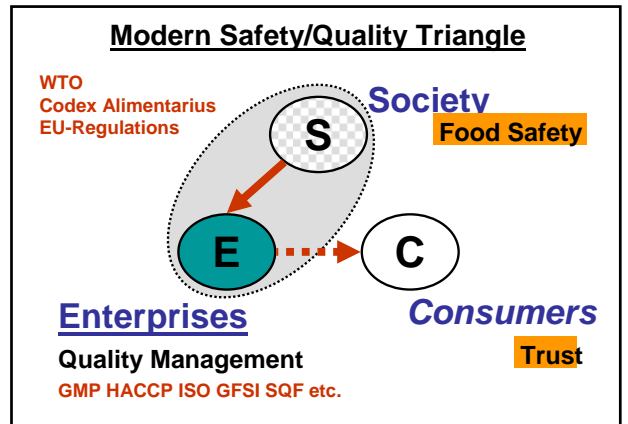
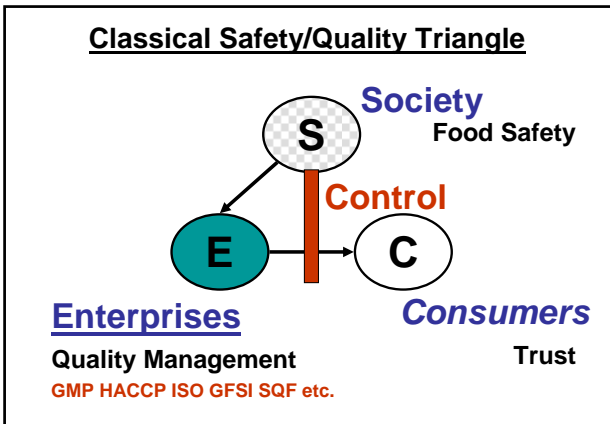
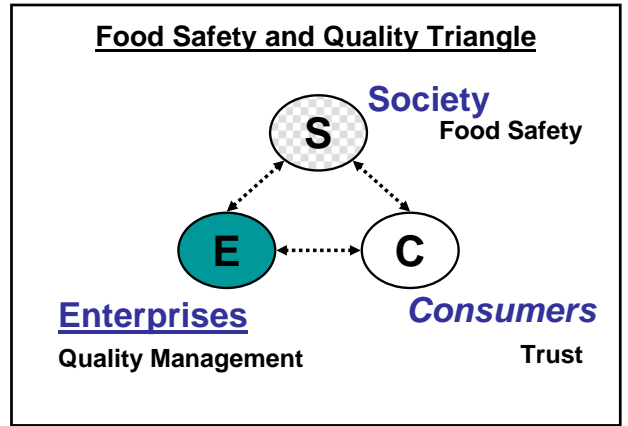
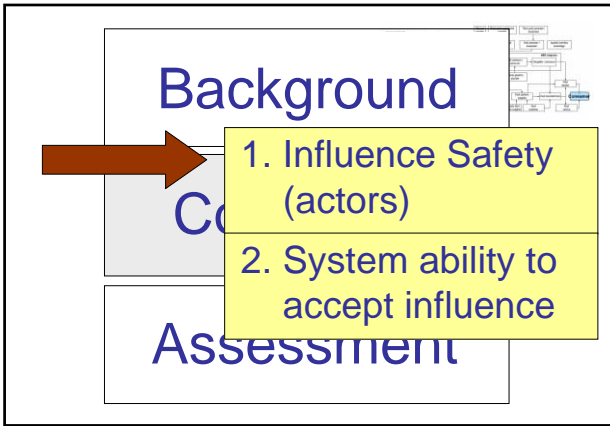
- Food for Life → ..... →



## Chain challenges

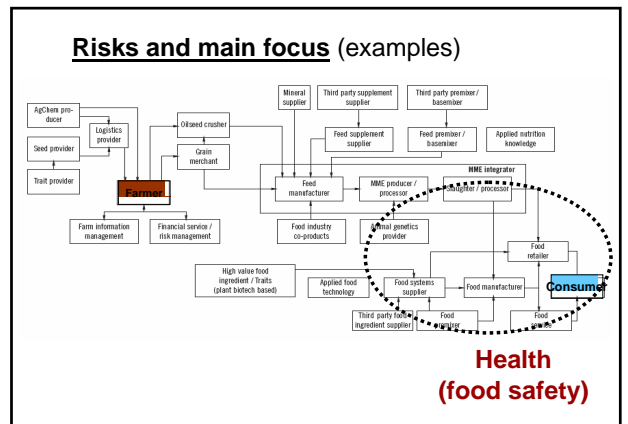
Globalization, industrialization

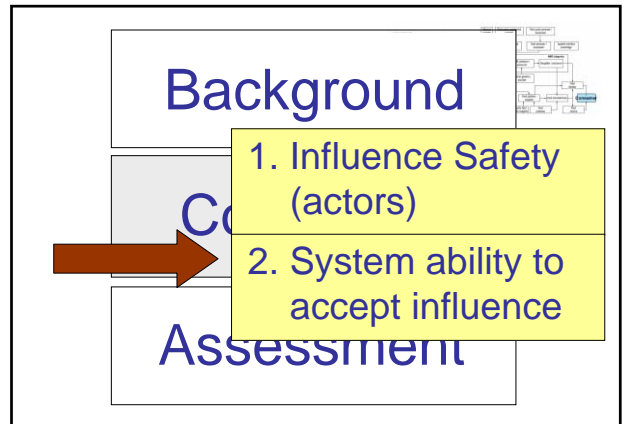
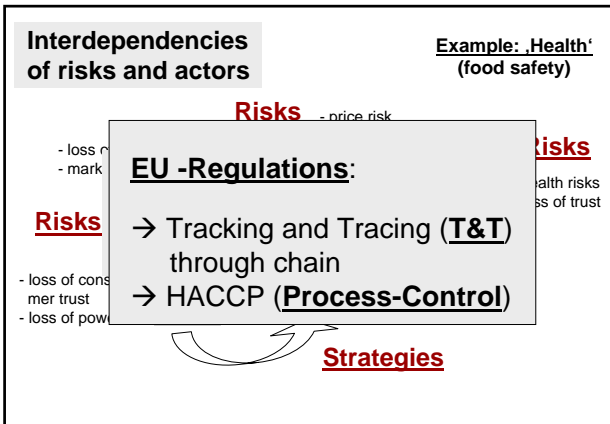
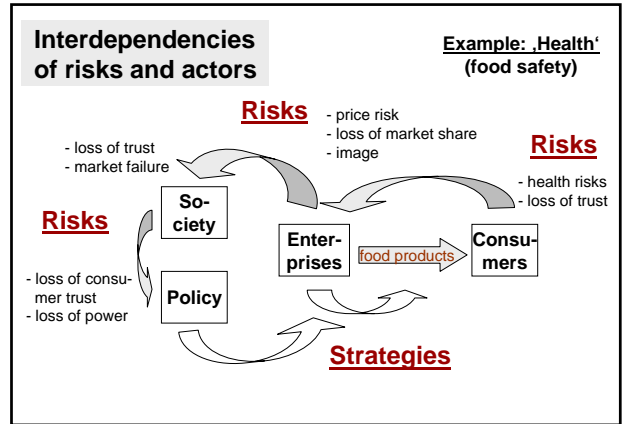
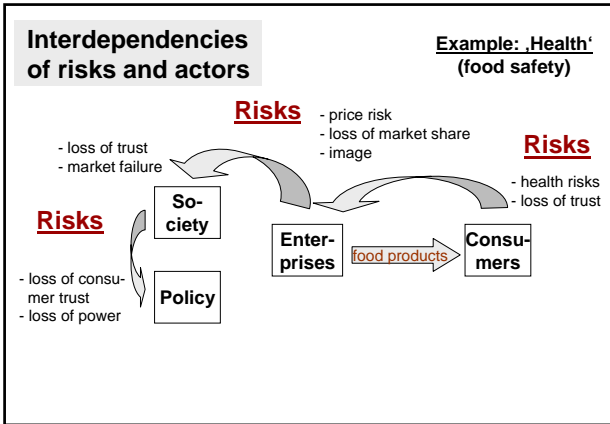
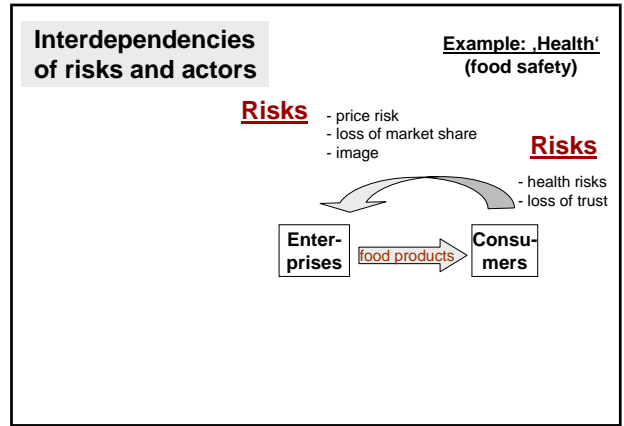
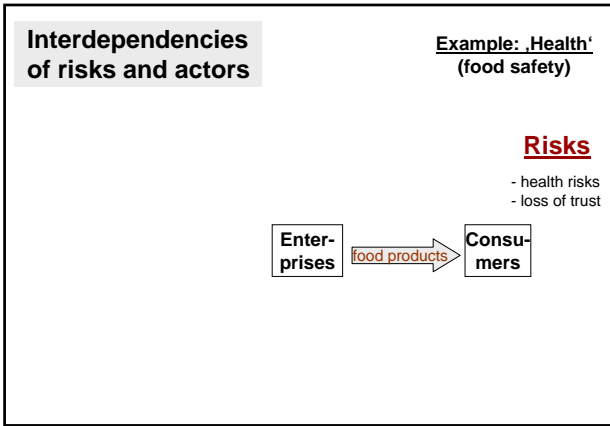
- Consumers - quality/safety
- Demand increase - diets
- Biofuels - land competition
- Urbanization - logistics
- Land loss



# Interdependency of effects

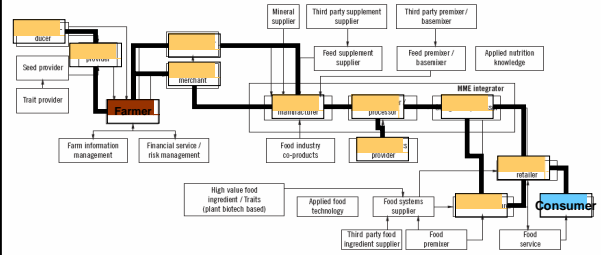
In sector



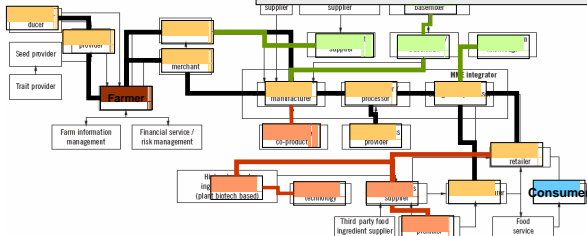


T&T-Success requires  
**Sector**  
 solution

**Food safety: tracking and tracing**

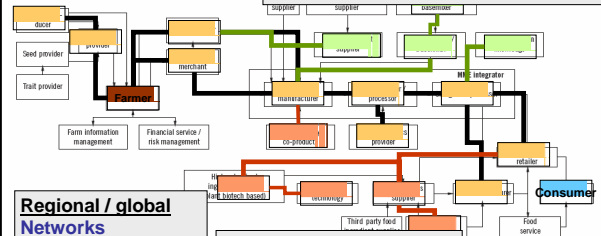


**Food safety: Network Challenge**



Costs of initiation

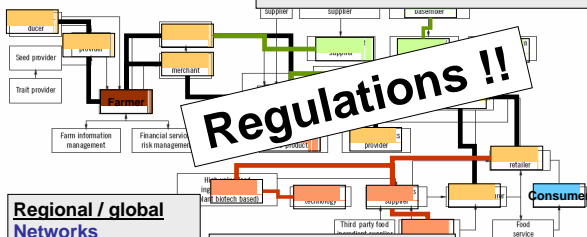
**Food safety: Network Challenge**



Regional / global  
 Networks  
 Standards  
 Organizational rules  
 Responsibilities

Legislation  
 Contractual arrangements  
 Relationships (trust)  
 Risk management

**Food safety: Network Challenge**



**Regulations !!**

Regional / global  
 Networks  
 Standards  
 Organizational rules  
 Responsibilities

Legislation  
 Contractual arrangements  
 Relationships (trust)  
 Risk management

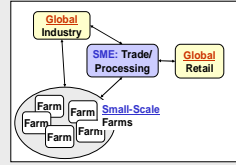
Agri-Food Network:  
**Complex Structure**



## Network operating in complex environments ...

cultural – social – natural – legal – political  
technological – structural - competitive

... with a multitude of considerations, interests ...



Coordination complexity in adjusting

High transaction costs

... with a multitude of considerations, interests ...

Background

Complexity

Assessment

HACCP

### Cost/Benefit-Focus: Competitiveness



Intangible costs

Intangible benefits

Semi-tangible costs

Semi-tangible benefits

Tangible costs (monetary)

Tangible benefits (monetary)

### Cost/Benefit-Focus: Competitiveness



Monetary costs

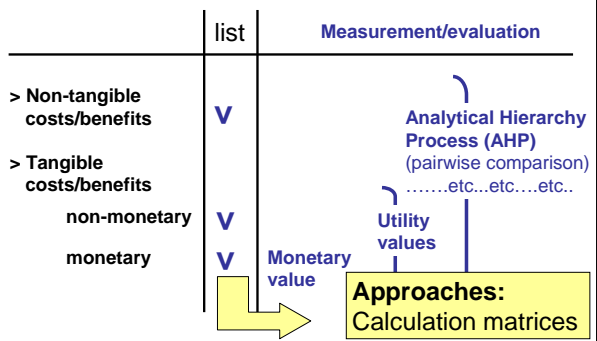
Non-monetary benefits

Monetary benefit

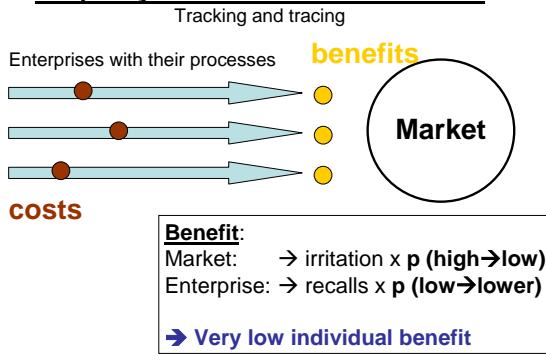
### The Measurement Complexity I

	list	Measurement/evaluation
> Non-tangible costs/benefits	✓	Analytical Hierarchy Process (AHP) (pairwise comparison) .....etc...etc...etc..
> Tangible costs/benefits		
non-monetary	✓	Utility value
monetary	✓	
		Monetary value

### The Measurement Complexity I

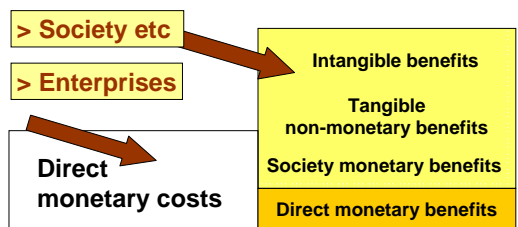


### Inequality in Cost-Benefit Distribution

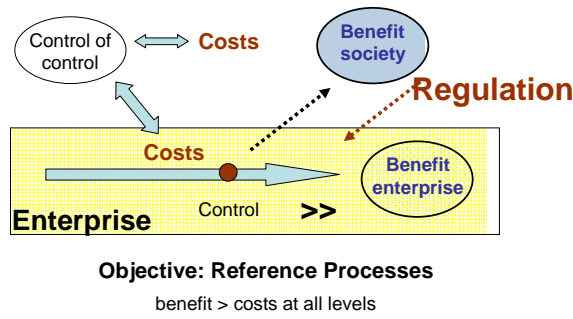


### The Measurement Complexity II

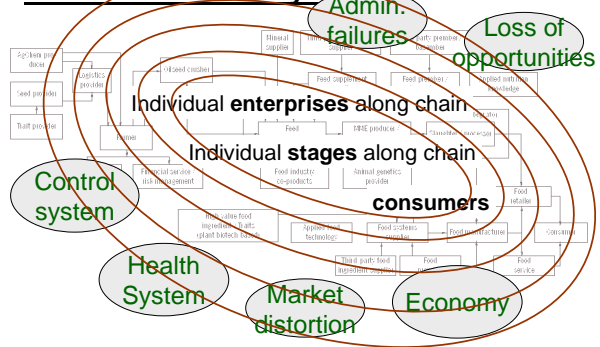
Differences in view → Reactions ?



### The Cost-Benefit Complexity



### Framework for Analysis



How to remain:

- Competitive
- Sustainable
- Responsible

## Food Safety Challenge

Results beneficial (benefits > costs)

Find balance:

- > enterprise responsibility and policy regulations
- > distribution of costs

How to

- Com
- Sustainable
- Responsible