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Is Co-Regulation more Efficient and Effective in
Supplying Safer Food? Insights from the UK

Marian GARCIA
Andrew FEARNE

American Agricultural Economics Association - 2006
Pre-Conference Workshop: New Food Safety
Incentives and Regulatory, Technological, and
Organizational Innovations
July 22, 2006, Long Beach, CA

Is Co-Regulation more Efficient and Effective in Supplying Safer Food? Insights from the UK

Marian Garcia & Andrew Fearne
Kent Business School
University of Kent



Presentation Outline

- Background
- Co-ordinated Approaches to Food Safety
- Efficiency and Effectiveness in the Provision of Food Safety
- Is Co-Regulation more Efficient and Effective in Supplying Safer Food?
 - The ZAP Salmonella Programme
- Conclusions

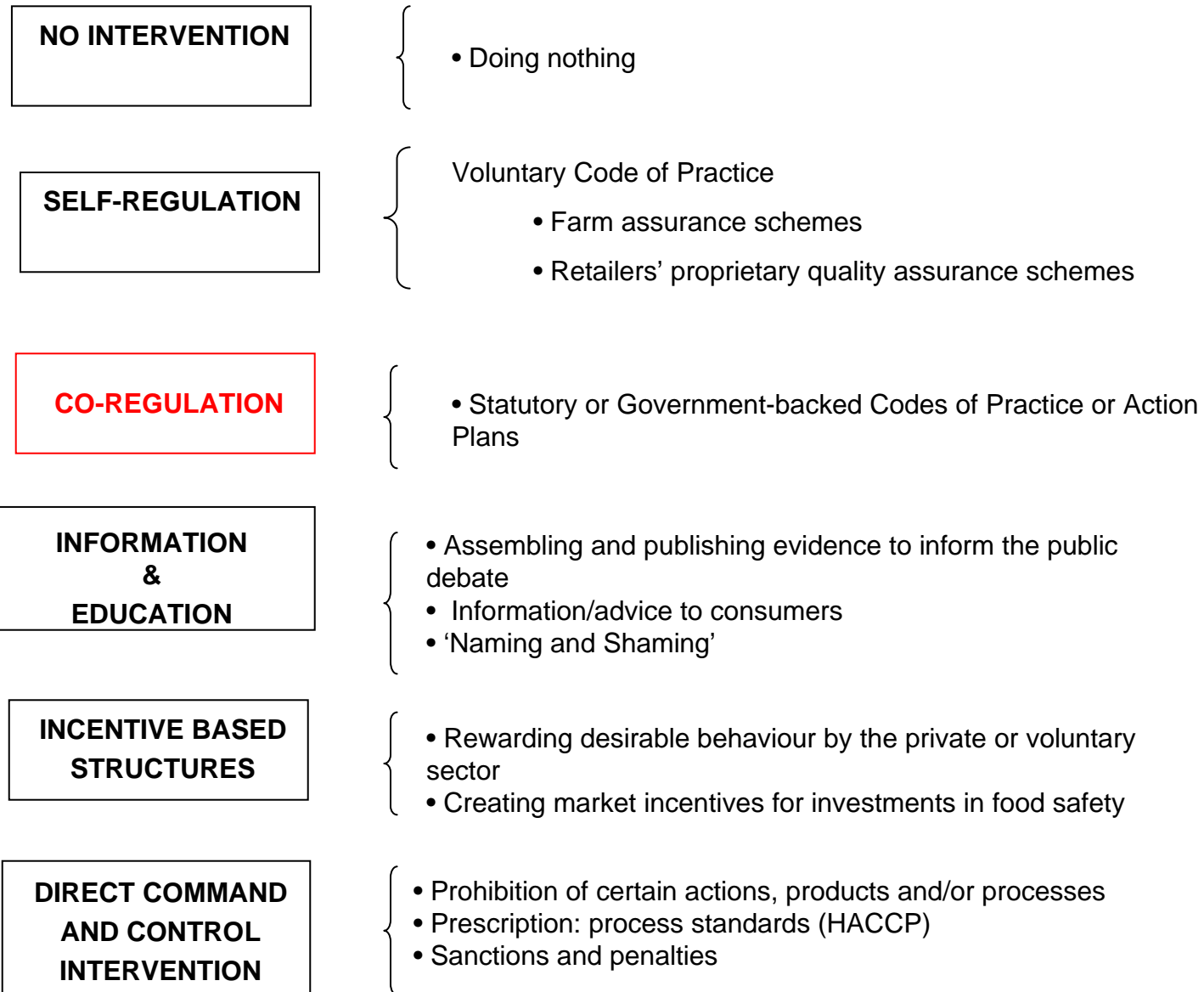


Background

- The control of food safety and other quality attributes are central features of regulatory activity due to:
 - Foodborne disease levels remain significant
 - Market failure in the provision of food safety has led to increasing political and economic demands for more effective food safety controls
- Shift in focus of regulation from prescriptive ‘command and control’ approach towards an ‘enforced self-regulatory’ approach →
responsibility for food safety lying more explicitly with food business operators
- The result is a more complex and demanding policy space involving public and private sector incentives and controls
- Could greater coordination of public and private efforts achieve greater food safety levels (social goal) at lower (regulatory) costs?

Options for Public Intervention

LEVEL OF GOVERNMENT INTERVENTION





Co-ordinated Approaches to Food Safety

- Co-regulation aims to combine the advantages of the predictability and binding nature of legislation with the flexibility of self-regulatory approaches
- Objective: To maintain the current level of food safety (social goal) at a lower (regulatory) cost or increase the level of food safety with existing resources
- Approach: Create collaborative governance structures and formulate regulatory processes involving multiple stakeholders from the public and private sectors
- Challenges:
 - Alignment of interests between private stakeholders (position of interest groups in the process of regulation) and the wider public interest (improvements in public health)
 - Danger of regulatory capture → the pursuit of regulated businesses' interests rather than those of the public at large
 - Lack of transparency and/or trust within and between public and private sector stakeholders
- Thus, need evidence of the
 - scale and scope of potential benefits (efficiency and effectiveness) of co-regulation to induce change in regulatory approaches
 - key enablers and barriers



Efficiency and Effectiveness in the Provision of Food Safety

Efficiency – *What is the cost of the regulatory process?*

- Setting Standards (S)
- Process Implementation (P)
- Enforcement and Monitoring (EM)
- KPIs
 - People
 - E.g. number of inspectors (EM)
 - Activities
 - E.g. communication of standards (P)
 - Time
 - E.g. time to complete the legislative process (S)



Efficiency and Effectiveness in the Provision of Food Safety

Effectiveness – To what extent does regulation meet policy objective?

- Policy Objective (e.g. UK FSA)

“To reduce the incidence of foodborne illness in the UK by 20% by 2006 by improving food safety throughout the food chain and by improving the enforcement of food law“

- KPIs

- Incidence of foodborne illness
- Product recalls
- Compliance rates
- Transparency & Trust

- Best practice regulation = efficient **AND** effective

- How close are existing regulatory approaches to best practice?

Potential Impact of Co-regulation on Efficiency

	People			Activities			Time			Potential Impact	Probability
STANDARD SETTING	Public Y	C-R ↑	Private X	Public Y	C-R ↓	Private X	Public Y	C-R ?	Private X	+	UK - H US - M Ca - L
PROCESS IMPLEMENTATION	Public Y	C-R ↑	Private X	Public Y	C-R ↓	Private X	Public Y	C-R ↓	Private X	++	UK - H US - M Ca - L
ENFORCEMENT AND MONITORING	Public Y	C-R ↓	Private X	Public Y	C-R ↓	Private X	Public Y	C-R ↓	Private X	+++	UK - L US - L Ca - L

Potential Impact of Co-regulation on Effectiveness

Incidence of foodborne illness			Product Recalls			Compliance Rate			Transparency & Trust		
Public	C-R	Private	Public	C-R	Private	Public	C-R	Private	Public	C-R	Private
Y	↓	X	Y	↓	X	Y	↑	X	Y	↑	X



Case Study: The UK Zoonoses Action Plan (ZAP) Salmonella Programme

Context

- Public health laboratory study (2001) revealed growing incidence of food borne illness linked to pork (32% of red meat outbreaks) and growing importance of salmonella (36% of pork-related outbreaks from 1992 to 1999)
- Govt research (2003) highlighted growth of salmonella in slaughtered animals and particularly in pigs

Table 1. Comparison of 1999/2000 and 2003 abattoir survey results for Salmonella species

	Cattle				Sheep				Pigs			
	n	N	%	95% CI	n	N	%	95% CI	n	N	%	95% CI
1999/2000	2	891	0.2	0.0-0.5	1	973	0.1	0.1-0.3	57	2509	23	21.4-24.7
2003	36	255	1.4	1.0-1.9	30	282	1.1	0.7-1.5	12	529	23.4	19.9-27.3
		3				5			4			

n: number of samples positive for organism

N: total number of samples examined

?: percentage of positive samples

95% CI: 95% confidence interval

Source: DEFRA (2004)



Case Study: The UK Zoonoses Action Plan (ZAP) Salmonella Programme

Context

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- Govt research (2003) highlighted growth of salmonella in slaughtered animals and particularly in pigs
- Competitive pressure from imported pork from countries (Netherlands, Denmark, Ireland) with existing (voluntary) salmonella monitoring schemes
- Vertically integrated and consolidated pork processing sector with through-chain QA scheme covering 90% of slaughtered pigs
- FSA strategic plan to work with industry to achieve a 50% reduction in the incidence of pigs which test positive for *Salmonella* at slaughter by 2010



The ZAP Salmonella Programme

■ Objectives

- Monitor trends in the levels of *Salmonella* in pig herds through detection of *Salmonella* antibodies in the juice from meat samples collected at abattoirs.
- The ZAP Salmonella monitoring programme does not in itself reduce *Salmonella* in pigs but it is the most practical way of identifying farms where problems with *Salmonella* exist and providing them with expert advice
- The initial target was to reduce the carriage of *Salmonella* in pigs by 25% by 2005.

■ Categorisation of risk

- Level 3: 85% or more of meat juice samples tested +ve
- Level 2: 65-85%
- Level 1: Less than 65% (set in order to capture 94% of farms)

Efficiency Gains from the ZAP Programme

	People	Activities	Time
<p>STANDARD SETTING</p>	Multiple stakeholder steering group	Negotiation of ZAP categories and cut-off points	Fastrack on the back of whole chain QA scheme
<p>PROCESS IMPLEMENTATION</p>	Farmers (MLC) – Abattoirs – FSA – Defra -	Testing & Admin Collection of samples Testing & Admin Information & Advice	Fastrack on the back of whole chain QA scheme
<p>ENFORCEMENT AND MONITORING</p>	ZAP become part of QA scheme (Industry), Extension services	Standardised testing protocols, advice packs, joint (veterinary) action plans	Fastrack on the back of whole chain QA scheme

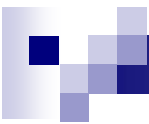


Table 2. Summary of the percentage of positive results from Zoonoses Action Plan Salmonella Programme between July 2004 and June 2005

	July-Sept 2004	Oct-Dec 2004	Jan-Mar 2005	April-June 2005
No. Samples reported				
Total assured	34994	36871	35146	36146
Percentage Positive				
Total	23.2%	23.9%	21.1%	20.6%
England	28.0%	29.2%	25.8%	25.1%
Scotland	10.6%	9.8%	8.3%	6.3%
N. Ireland assured	11.2%	11.5%	10.4%	10.7%

Sources: BPEX



Table 3. ZAP status of holdings reported for the quarter April to June 2005

Assured herds	England	Scotland	N. Ireland	All Assured
ZAP Level 1	822	156	166	1144
ZAP Level 2	79	3	2	84
ZAP Level 3	26	0	0	26
ZAP status assigned	79.8%	85.9%	96.6%	82.4%

Sources: BPEX



Conclusions

- Intuitive appeal of co-regulatory approach
 - Efficiency and Effectiveness
- Barriers to more widespread adoption
 - Fear of regulatory 'capture' (consumers & SMEs)
 - Lack of trust
 - Resistance to change (institutional & organisational)
 - Complexity of multiple stakeholder engagement (involvement and accountability)
 - Lack of empirical evidence



Conclusions

■ Data limitations

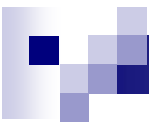
- Quality, availability & access

■ Validity of KPIs

- Between sectors (public and private)
 - Differing incentives and policy objectives

- Between countries

- policy objectives, regulatory environment, industry structure



Dr Marian Garcia is a Senior Lecturer in Agricultural Economics at the Kent Business School, University of Kent. She has a PhD in Agricultural and Food Economics from the University of Reading, UK. Her research interests are food safety and the impact of food safety regulations and standards on firm competitiveness and international trade, and the interaction between statutory and voluntary regulations and the role of public and private institutions in the governance of food safety.

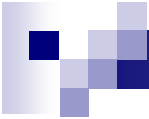
marian.garcia@imperial.ac.uk

Andrew Fearne: The son of a pig farmer in the South East of England, Andrew graduated in French and Economics from Kingston University in 1983, after which he studied for his PhD in agricultural economics at Newcastle University. After a brief spell with the National Farmers' Union, he returned to Newcastle where he spent six years as a lecturer in agricultural commodity marketing. In 1994 he moved to Imperial College London, setting up the Centre for Food Chain Research in the Department of Agricultural Sciences, Imperial College London (Wye Campus), providing a multi-stakeholder perspective on a wide range of food chain issues but with particular emphasis on food marketing and supply chain management.

In February 2005 he took up a position as Principal Research Fellow at Kent Business School, University of Kent, where he is now Director of the Centre for Supply Chain Research, focusing particularly on vertical co-ordination in the food and construction sectors and incorporating the dunnhumby Academy of Consumer Research, which has exclusive access to the Tesco clubcard database, for the analysis of food purchasing behaviour of over a million UK households.

Andrew's research and consulting activities are eclectic but focussed primarily on the creation and management of value-added for sustainable competitive advantage. He is the founding editor of the International Journal of Supply Chain Management, which addresses both practical and research issues concerned with the efficient and effective co-ordination of supply chains, from raw material supply to final consumption.

a.fearne@imperial.ac.uk



“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations” - 7/22/2006, Long Beach, CA

AAEA section cosponsors: FSN, AEM, FAMPS, INT

Industry perspectives on incentives for food safety innovation

Continuous food safety innovation as a management strategy

Dave Theno, Jack in the Box, US

Economic incentives for food safety in their supply chain

Susan Ajeska, Fresh Express, US

Innovative food safety training systems

Gary Fread, Guelph Food Technology Centre, Canada

Organizational and technological food safety innovations

Is co-regulation more efficient and effective in supplying safer food?

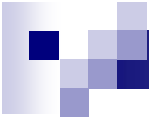
Marian Garcia, Dept. of Agricultural Sciences, Imperial College London

Andrew Fearne, Centre for Supply Chain Research, University of Kent, UK

Chain level dairy innovation and changes in expected recall costs

Annet Velthuis, Cyriel van Erve, Miranda Meuwissen, & Ruud Huirne

Business Economics & Institute for Risk Management in Agriculture,
Wageningen University, the Netherlands



**“New Food Safety Incentives & Regulatory, Technological
& Organizational Innovations” - 7/22/2006, Long Beach, CA (con’t)**

Regulatory food safety innovations

Prioritization of foodborne pathogens

Marie-Josée Mangen, J. Kemmeren, Y. van Duynhoven, A.H. and Havelaar,
National Institute for Public Health & Environment (RIVM), the Netherlands

Risk-based inspection: US Hazard Coefficients for meat and poultry

Don Anderson, Food Safety and Inspection Service, USDA

UK HAS scores and impact on economic incentives

Wenjing Shang and Neal H. Hooker, Department of Agricultural,
Environmental & Development Economics, Ohio State University

Private market mechanisms and food safety insurance

Sweden’s decade of success with private insurance for *Salmonella* in broilers

Tanya Roberts, ERS, USDA and Hans Andersson, SLU, Sweden

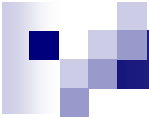
Are product recalls insurable in the Netherlands dairy supply chain?

Miranda Meuwissen, Natasha Valeeva, Annet Velthuis & Ruud Huirne,
Institute for Risk Management in Agriculture; Business Economics & Animal
Sciences Group, Wageningen University, the Netherlands

Recapturing value from food safety certification: incentives and firm strategy

Suzanne Thornsberry, Mollie Woods and Kellie Raper

Department of Agricultural Economics, Michigan State University



**“New Food Safety Incentives & Regulatory, Technological
& Organizational Innovations” - 7/22/2006, Long Beach, CA (con’t)**

Applications evaluating innovation and incentives for food safety

Impact of new US food safety standards on produce exporters in northern Mexico

Belem Avendaño, Department of Economics, Universidad Autónoma de Baja California, Mexico and Linda Calvin, ERS, USDA

EU food safety standards and impact on Kenyan exports of green beans and fish

Julius Okello, University of Nairobi, Kenya

Danish *Salmonella* control: benefits, costs, and distributional impacts

Lill Andersen, Food and Resource Economics Institute, and Tove Christensen, Royal Danish Veterinary and Agricultural University, Denmark

Wrap up panel discussion of conference

FSN section rep. – Tanya Roberts, ERS, USDA

AEM section rep. – Randy Westgren, University of Illinois

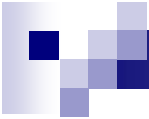
INT section rep. – Julie Caswell, University of Massachusetts

FAMPS section rep. – Jean Kinsey, University of Minnesota

Discussion of everyone attending conference

Note: speaker is either the 1st person named or the person underlined.

Thanks to RTI International for co-sponsoring the workshop.



“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations” - 7/22/2006, Long Beach, CA (con’t)

Workshop objectives

- Analyze how new public policies and private strategies are changing economic incentives or food safety,
- Showcase frontier research and the array of new analytical tools and methods that economists are applying to food safety research questions,
- Evaluate the economic impact of new food safety public policies and private strategies on the national and international marketplace,
- Demonstrate how new public policies and private strategies in one country can force technological change and influence markets and regulations in other countries, and
- Encourage cross-fertilization of ideas between the four sponsoring sections.

Workshop organizing committee

Tanya Roberts, ERS/USDA, Washington, DC - Chair

Julie Caswell, University of Massachusetts, MA

Helen Jensen, Iowa State University, IA

Drew Starbird, Santa Clara University, CA

Ruud Huirne, Wageningen University, the Netherlands

Andrew Fearne, University of Kent, UK

Mogens Lund, FOI, Denmark

Mary Muth, Research Triangle Institute Foundation, NC

Jayson Lusk, Oklahoma State University, OK

Randy Westgren, University of Illinois, IL

Darren Hudson, Mississippi State University, MI