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Impact of EU Food Safety Standards on Kenyan  
Exports of Green Beans and Fish: What Role Has  
Collective Action Played?

Julius J. OKELLO

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



# Impact of EU Food Safety Standards on Kenyan Exports of Green Beans and Fish: What Role Has Collective Action Played?

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Julius J. Okello  
University of Nairobi/ICRISAT

American Agricultural Economics Association Pre-Conference  
Workshop, Long Beach – California, July 22, 2006



# Overview

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- Complying with EU food safety standards (EUFSS):
  - Entail high transaction costs
  - Require Human, Physical, Social capital
  - Entail economies of size (ES)
- Small players disadvantaged → exit (beans) and failure to comply (fish) → initial drop in exports
- But responded by forming supplier organizations:
  - resolved their idiosyncratic market failures
  - enabled them attain economies of scale } → increased exports
- Small players can avoid being marginalized by EUFSS using by banding together into supplier organizations



# EU Food Safety Standards (EU FSS)

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- EU public regulations
  - Pesticide residue limits
  - Packer hygiene
  - Phytosanitary requirements (pest-free)
- EU supermarket standards
  - Private protocols
    - Nature's Choice (Tesco), Farm to Folk (M&S)
  - Traceability system
- Enforced via monitoring and certification

# For Beans, EUFSS imply...



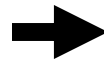
# For beans, EU FSS imply...



# For Fish, EUFSS imply...



Open landing beaches



Landing facility with  
pit latrine, wall, roof

# For Fish, EU FSS imply...



Makeshift holding facilities



Landing/holding facility with potable water, cement floor



# Research Questions


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- How are supplier's (farmers, fisherfolk) affected?
  - How are exports affected?
- What role has collective action played?



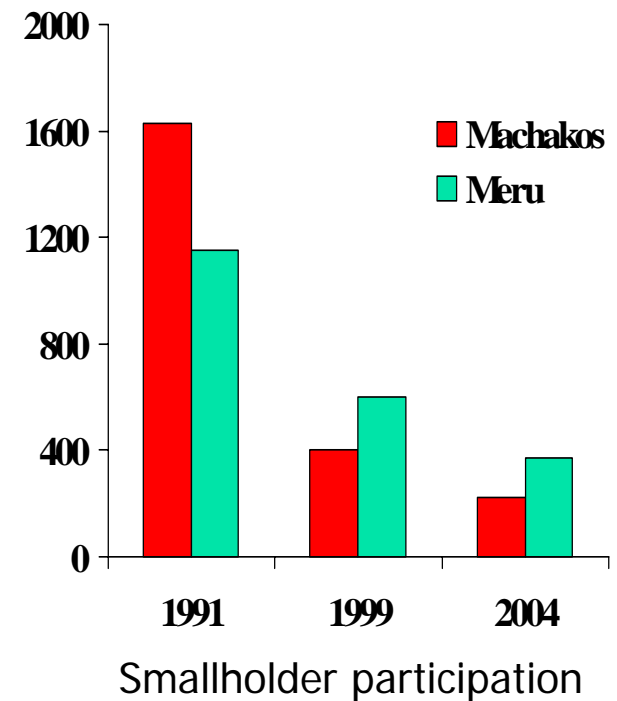
# Methodology

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- The paper uses transaction cost (TC) theory ala Douglas North
- EUFSS are credence attributes
- Creates measurement problems which implies high TC
- Hypotheses
  - i) High TC → Exit
  - ii) Exit overcome by collective action
- Paper based on 2003/2004 survey in Kenya 

# Initial impact... beans...

- Number of smallscale suppliers dropped
- Driven by high TC
- EUFSS entail:
  - Temporal asset specificity
  - Physical asset specificity
  - Knowledge/skill specificity

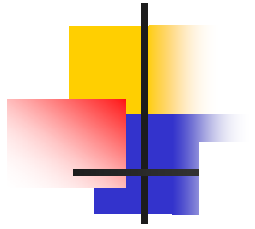




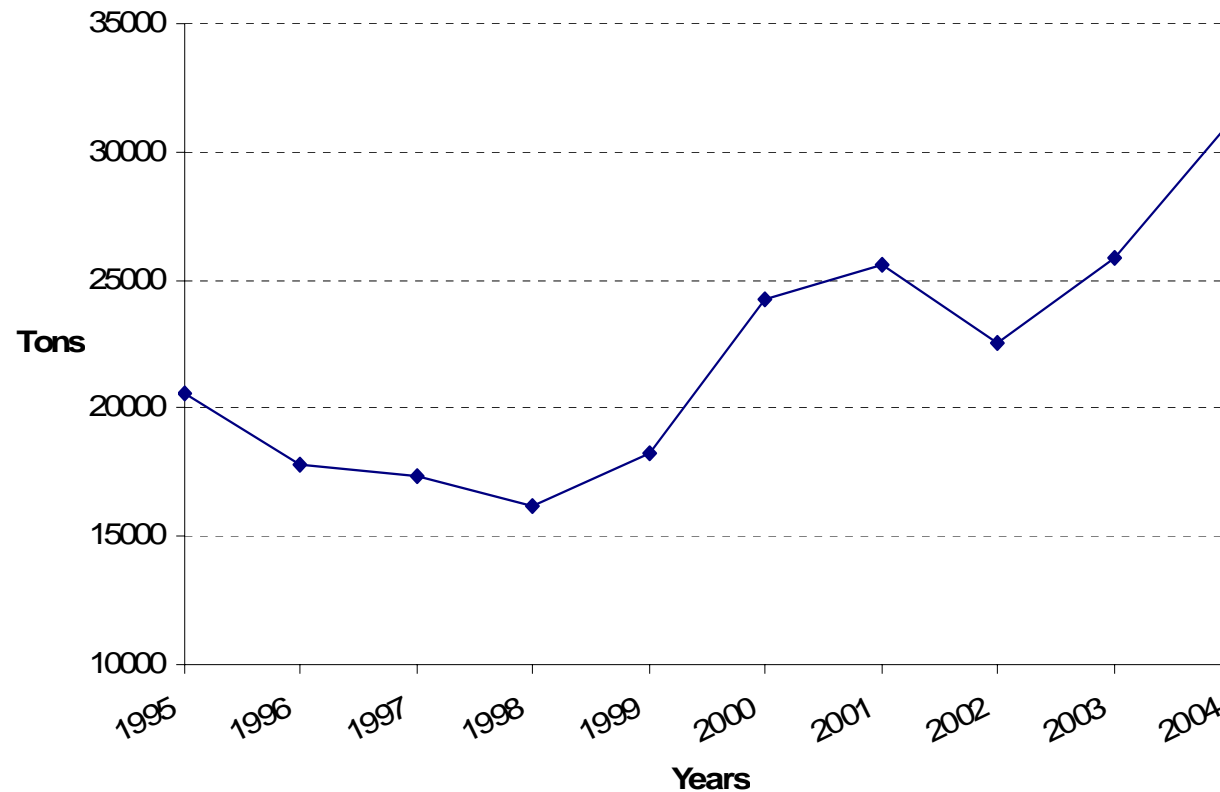
## Initial impact... fish...

Ban, after ban, after...

Date	Event/Restriction
11/26/97 - 04/03/97	Export ban by Italy & Spain (Salmonella contamination)
04/04/97- 06/30/98	Mandatory Salmonella testing
12/23/97 - 06/30/98	-Export ban by EC ( <i>Vibro</i> ) - Mandatory <i>Vibrio</i> testing
04/12/99 – 12/01/00	Export ban by EC (Pesticide residue)

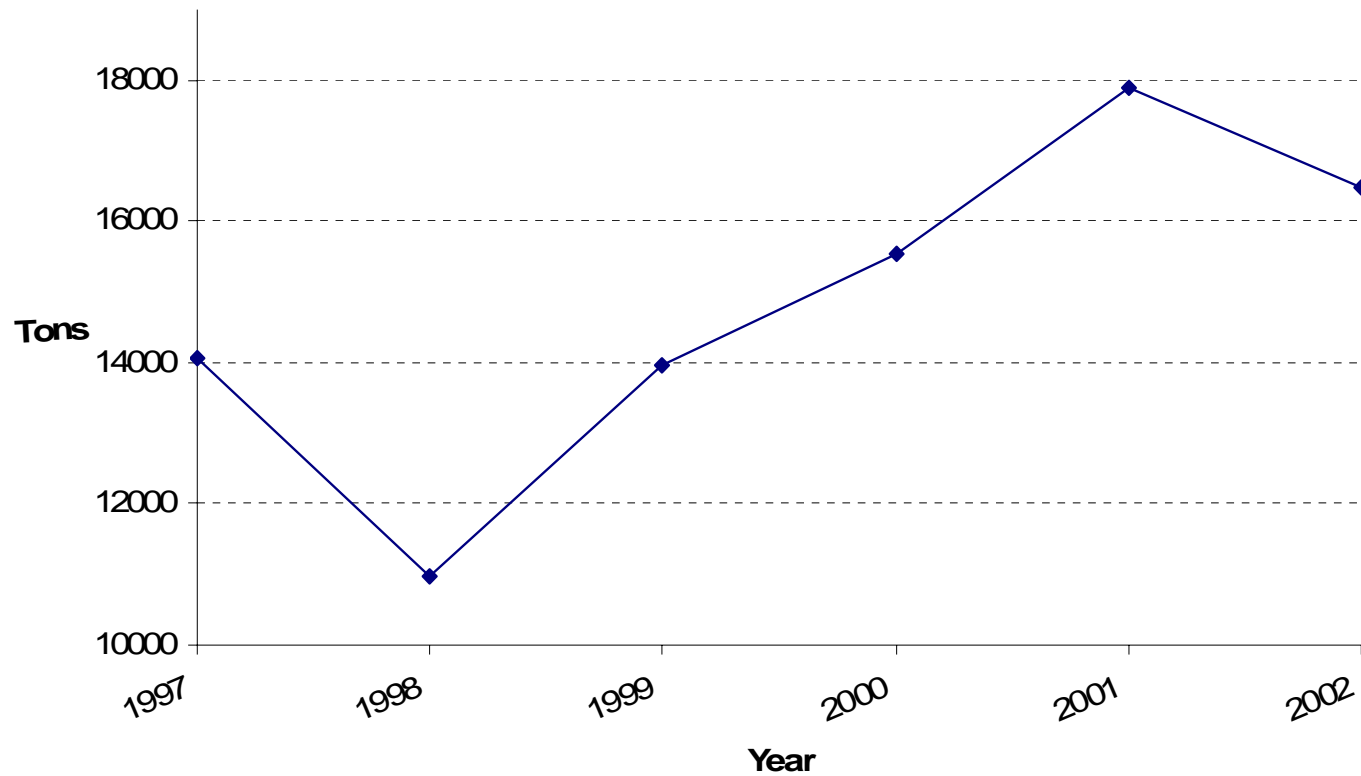


## Impact on Exports ... beans...



Decline but followed by recovery and rapid growth

# Impact on exports ... fish...



Initial shock followed by defiance of subsequent bans



# Why these trends?

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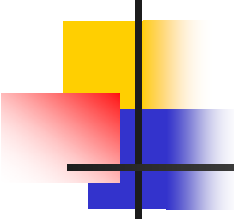
- In both beans and fish institutional innovation in form of **collective action** occurred
- Smallscale farmers, fisherfolk & fish exporters formed supplier marketing organizations (SMOs) (usually in form of self-help groups)
  - SMOs provided or lobbied the government to provide the facilities needed to meet EU FSS
  - SMOs therefore resolved idiosyncratic market failures of individual suppliers



## Why the trends? ...contd...

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- In beans, SMOs hired a clerk and field assistant to help meet hygiene, traceability, pesticide usage standards
- SMOs also provided grading shed, charcoal cooler
- In fish, SMOs took over hygiene management in landing beaches & lobbied government to play its role



## Why join SMO? – Farmer Ranking

Reason	Rank (%)		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Market access	69	19	7
Access to quality seed	13	24	30
Higher Price	13	21	20

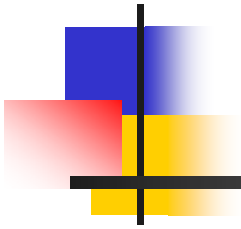
- Overwhelmingly, green beans farmers joined SMOs to gain access to the lucrative EU market



# Conclusion

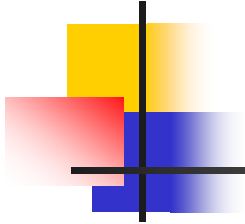
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- EUFSS imposed high TC on bean and fish suppliers which
  - Led to exit of some suppliers
  - reduced exports initially
- Suppliers overcame the challenges of EU FSS through collective action → formation of SMOs
  - Resolved suppliers idiosyncratic market failure
  - Led to increase in exports of beans and fish
- Hence suppliers can avoid being marginalized by EU FSS by banding together to form SMOs

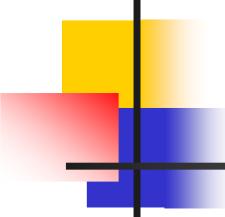


Thank you!





- **Julius J. Okello** graduated with a PhD in Agricultural Economics with a specialization in Environmental and Resource Economics from Michigan State University. His dissertation focused on the effects of international food safety standards on health and morbidity of developed country farmers and on the impact of those standards on the participation of smallholder farmers in export market. He is currently a Lecturer at the Department of Agricultural Economics, University of Nairobi - Kenya and Adjunct Scientist at the International Crops Research Institute for Semi Arid Tropics (ICRISAT). His current research focuses on the institutional innovations to promote small scale farmer/supplier compliance with food safety standards and access to lucrative export markets. His most recent publications include: (i) Do international food safety standards marginalize the poor: evidence from Kenya green bean growers (*Journal of Food Distribution and Research*) ii) Compliance with international food safety standards: a paired case study of small and large Kenyan green bean family farmers (*Review of Agricultural Economics* – forthcoming).
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***“New Food Safety Incentives & Regulatory, Technological & Organizational Innovations”*** - 7/22/2006, Long Beach, CA

AAEA section cosponsors: FSN, AEM, FAMPS, INT

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***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?

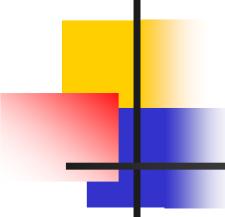
Marian Garcia, Dept. of Agricultural Sciences, Imperial College London

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



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***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

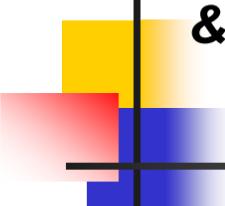
Tanya Roberts, ERS, USDA and Hans Andersson, SLU, Sweden

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 Thornsby, Mollie Woods and Kellie Raper  
Department of Agricultural Economics, Michigan State University



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***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 for 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, &
- 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 Fearn, 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