



**FEED**<sup>THE</sup>**FUTURE**

The U.S. Government's Global Hunger & Food Security Initiative

GLOBAL LEARNING AND EVIDENCE EXCHANGE  
**M A R K E T   S Y S T E M S**

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MARCH 21-24, 2017 // BANGKOK, THAILAND

Ensuring Quality and Consistency of  
Supply of Safe Food in Domestic Markets

**John E. Lamb, Sr. Adviser in  
Agriculture, Food Security, Trade, and Food Safety**



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## *BROADLY DEFINED, AGRICULTURE IS A HUGE DEVELOPMENT DOMAIN*



Crops



Aquaculture & Mariculture



Livestock



Agro-forestry



## *EVEN PLANT AGRICULTURE OFFERS MYRIAD UNDEREXPLOITED OPPORTUNITIES*

Identified species: 287,655

Used species: 100,000 (Heywood)

Edible species: 12,650 – 75,000  
(Myers, Wilson, Kunkel)

Economic uses: 9,500 (Uphof)

Potential food source: 7,000 (Wilson)

Used for food: 3,000 (Society for  
Economic Botany)

Cultivated for food: 2,000 (Wikipedia)

Commercialized: 200  
(Society for Economic Botany)

Major economic crops: 22  
(Society for Economic Botany)





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Food



Fiber



Feed



Other



Bio-fuels



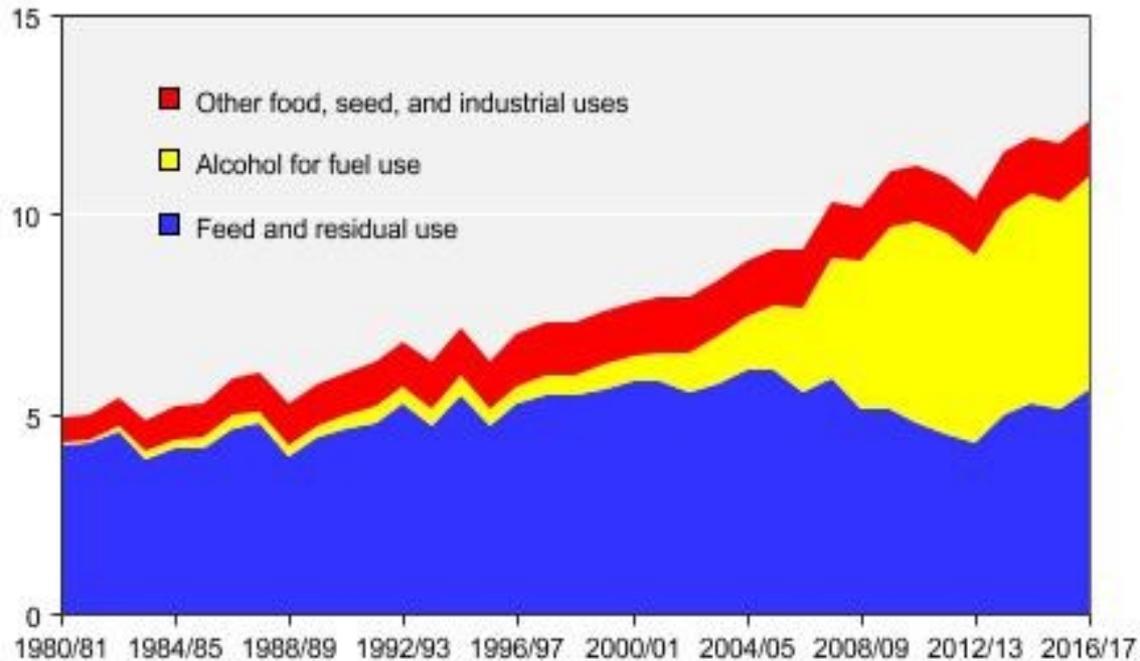


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## U.S. domestic corn use

Billion bushels



Source: Calculated by USDA, Economic Research Service.  
Updated: January 2017.

>90 million acres

>10-20% of crop is exported

>US accounts for 40% of global exports







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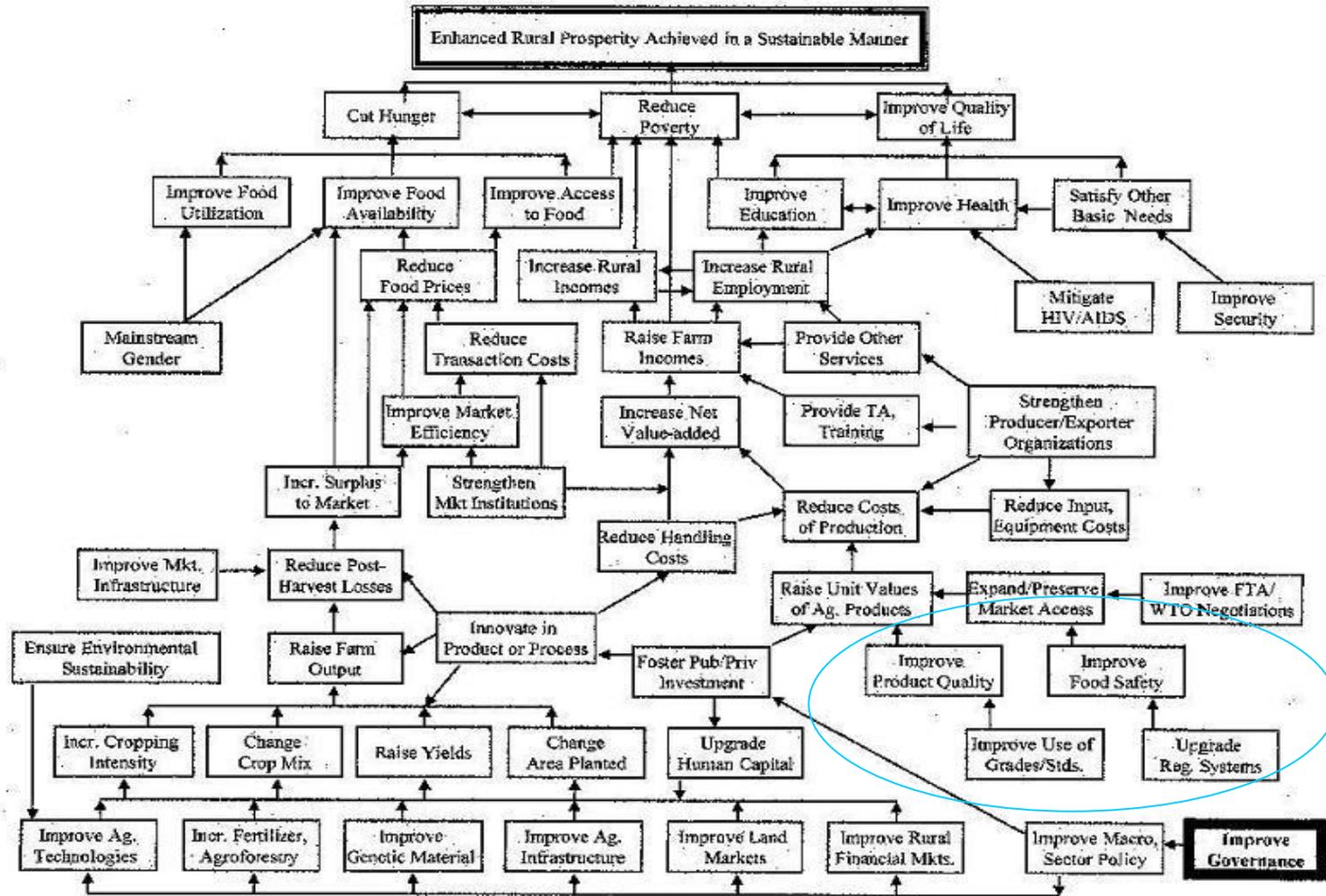
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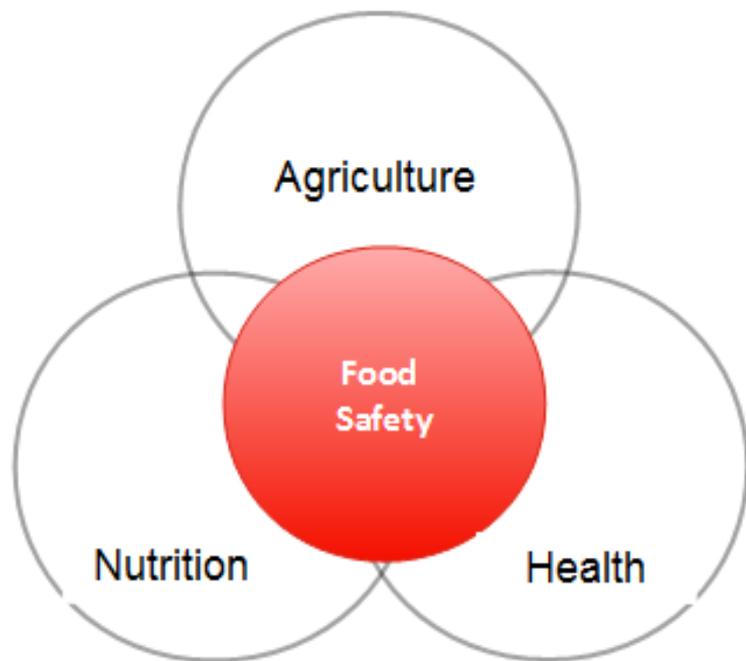


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# FOOD SAFETY IS THE GREAT CONNECTOR BETWEEN AGRICULTURE, NUTRITION AND HEALTH





## WHY FOOD SAFETY REPRESENTS A PARTICULARLY DIFFICULT CHALLENGE TO DEVELOPMENT

- Most evident by its absence
- Old approach emphasized control over prevention
- Traditionally relegated to governments, and within that to regulators



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- Inherently a cross-sectoral challenge
- Requires very specific technical expertise in a wide array of disciplines, themes, commodities, industries
- **Difficult to agree on priorities**
- **Hard data and political will are often both lacking**
- **Hard to keep up with science, technology, and... meetings!**



## IS THIS FUNDAMENTALLY A SCIENTIFIC CHALLENGE...

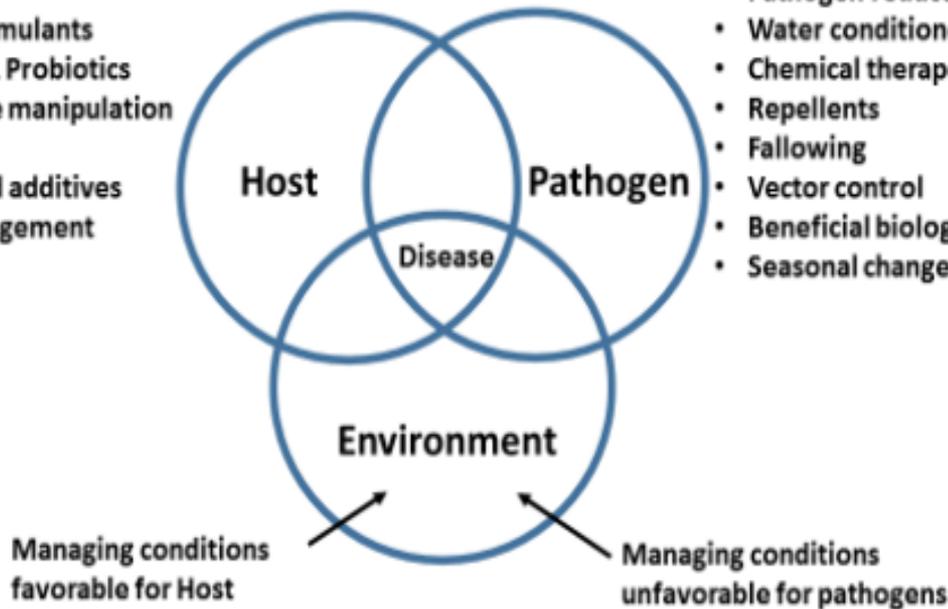
### Manipulating the disease triangle

#### Host Augmentation

- Genetic selection
- Vaccination
- Immuno-stimulants
- Prebiotics & Probiotics
- Microbiome manipulation
- Antibiotics
- Feed & Feed additives
- Stress management

#### Pathogen Control

- Biosecurity measures
- Pathogen reduction equipment
- Water conditioners
- Chemical therapeutics
- Repellents
- Fallowing
- Vector control
- Beneficial biologicals
- Seasonal changes to production





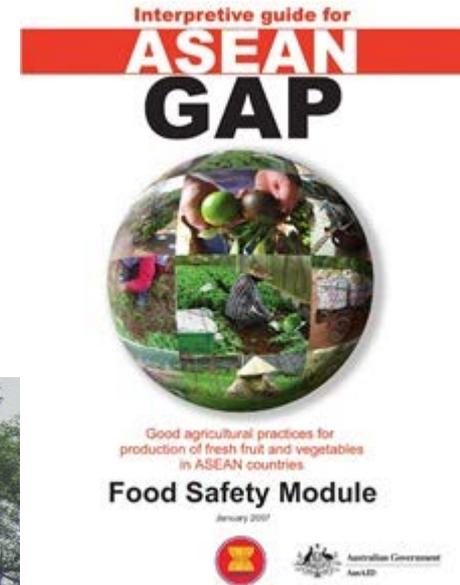
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## ...OR MOSTLY A QUESTION OF POLICIES, REGULATIONS AND ENFORCEMENT...



VIETNAM BANS PARAQUAT & 2,4-D





## WHY FOOD SAFETY SHOULD MATTER TO THE USG

- >Importance of food imports to US itself continues to rise, as does importance of emerging diseases such as HPAI
- >Finalization of the design of FSMA, coupled with significant funding increases for FDA, extends reach of USG into supply sources all over the world
- >1996 World Food Summit included food safety in the classic, now widely accepted definition of food security



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- >1996 World Food Summit included food safety in the classic, now widely accepted definition of food security
- >Original FtF strategy implicitly covered food safety
- >New Global Strategy explicitly includes it
- >SDGs also explicitly includes safe food



## \*DEVELOPMENT HYPOTHESIS

- The national, regional & global agricultural sectors interact constantly in terms of price discovery, product and financial flows, transfer of data/information/technology, and paradigms for doing business
- Changes in the structure, conduct, and performance of the global agricultural sector over the last 25 years have been profound, are continuing, and arguably accelerating within Asia



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- Changes in the structure, conduct, and performance of the global agricultural sector over the last 25 years have been profound, are continuing, and arguably accelerating within Asia
- Domestic agri-food markets in Asia remain significantly different, yet are also evolving and gradually emulating global trends with a lag
- The development community cannot effectively address the complex challenges of food safety without first understanding how agri-food markets work and then constructively engaging with policy-makers, regulators, and economic actors to stimulate and achieve continuous improvement in the direction of global best practices



## A PROPER RESPONSE SHOULD REFLECT THE REALITIES OF THE AGRIFOOD SECTOR

- Globalization of sourcing, processing, and retailing
- Basis of competition shifted from firm to supply chains, next to value chains, then value streams, finally global “enterprise”
- Waves of industry consolidation, from retailers back upstream



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- Advances in use of EDI, followed by growing importance of ITC as competitive tool, culminating in Big Data and micro-targeting
- Initially, emergence of rules-based trade and commerce under WTO, succeeded by rise of private standards, which proliferated
- Fulcrum of value creation and retention moved downstream
- Relentless push to cut costs, especially upstream



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## *Plus ça change ...*

An agribusiness commodity system, as defined by the author, encompasses all the participants involved in production, processing, and marketing of a single farm product. Such a system includes farm suppliers, farmers, storage operators, processors, wholesalers, and retailers involved in a commodity flow from initial inputs to the final consumer. It also includes all the institutions which affect and coordinate the successive stages of a commodity flow, such as the government, futures markets, and trade associations.



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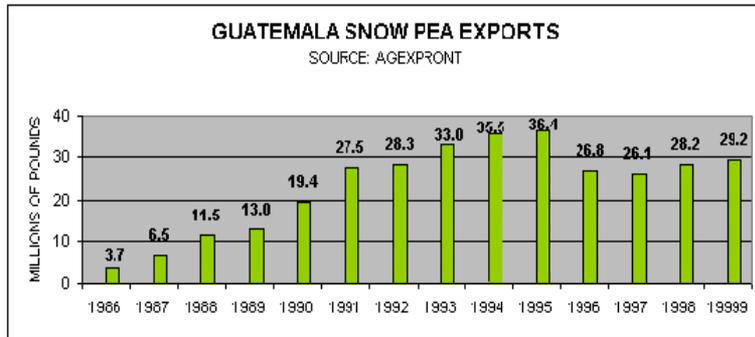
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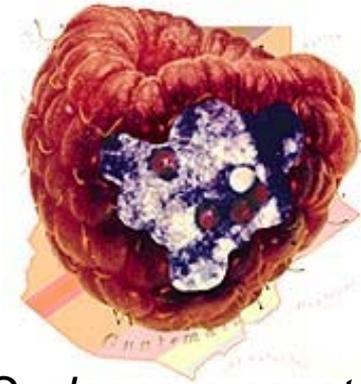
**Goldberg, Ray A., *Agribusiness Coordination: A Systems Approach to the Wheat, Soybean, and Florida Orange Economies*, Boston, Harvard Business School, 1968, xix + 256 pp. (\$12.00)**



## CRITICAL FOOD SAFETY CHALLENGES FACED BY CENTRAL AMERICA IN NTAE BOOM PERIOD



Re-registration of EBDCs under FIFRA (esp. use of Chlorothalonil)



*Cyclospora cayetanensis* in red raspberries



*Staphylococcus aureus* and *E. Coli* in artisanal cheese



Water Pressure System to push melons at Discharge Pond - Santa Rosa packing facility

*Salmonella* in melons



## INITIAL RESPONSES SUPPORTED BY USG IN CENTRAL AMERICA

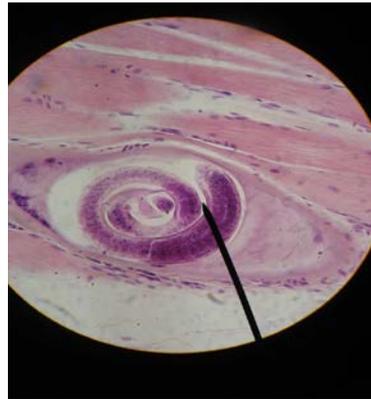
- > Awareness raising for growers and exporters
- > Significant program of training in IPM and Appropriate Use of Pesticides carried out by Escuela Agricola Zamorano
- > First public/private partnership in Guatemala through PIPA'A (*Programa Integral de Proteccion Agricola y Ambiental*)
- > Bringing cognizant EPA and FDA officials to the region to frame a proper prevention and mitigation program for pesticides in specialty vegetables, coupled with modification of country-wide automatic detention
- > Model program for Cyclospora designed jointly with FDA, PMA, FMI



## \*\*THERE ARE MANY TYPES OF FOOD/WATER SAFETY HAZARDS OF CONCERN



Pesticides



Parasites



Natural Toxins



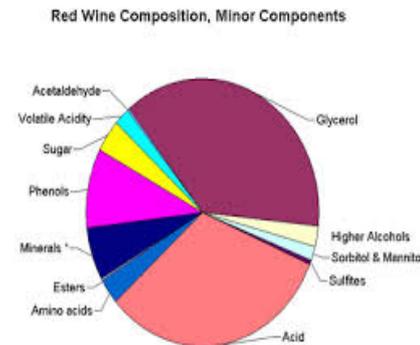
Microbial Pathogens



Additives



Colorants



Allergens



Foreign Matter



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## WHY FOOD SAFETY MATTERS TO THE WORLD BANK

The lack of safety in food causes great harm to individual health, nutritional status, and productivity, especially for women, children under five, and the vulnerable

It weakens the competitive position of producers, industries and countries in which ag-based enterprise is a significant contributor to economic activity



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It weakens the competitive position of producers, industries and countries in which ag-based enterprise is a significant contributor to economic activity

It interferes with crosscutting objectives such as youth and employment, gender empowerment, and enterprise development

It necessitates remedial treatment and mitigation measures that often cost much more than prevention would have cost

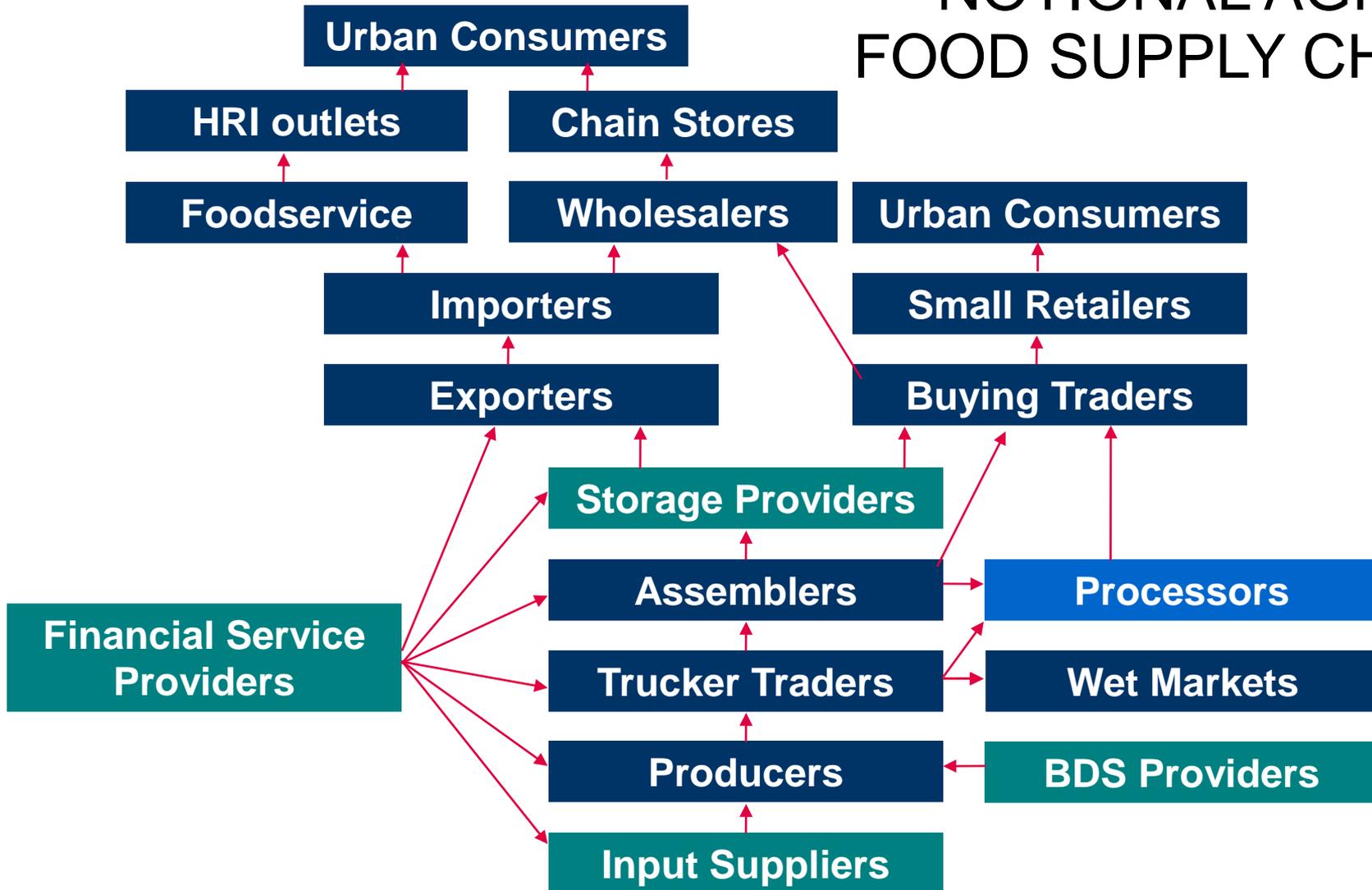
It reduces GDP directly and indirectly



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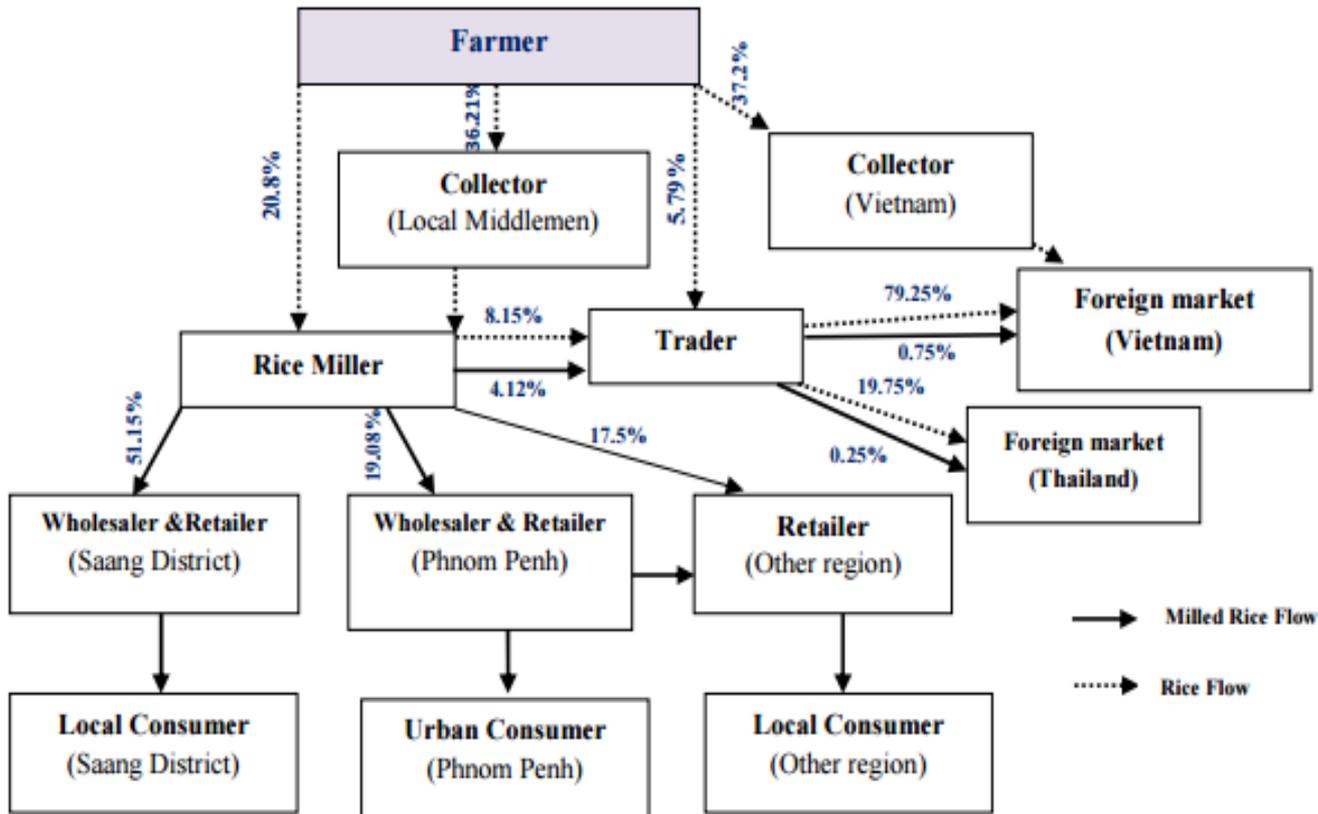
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## \*NOTIONAL AGRI-FOOD SUPPLY CHAIN



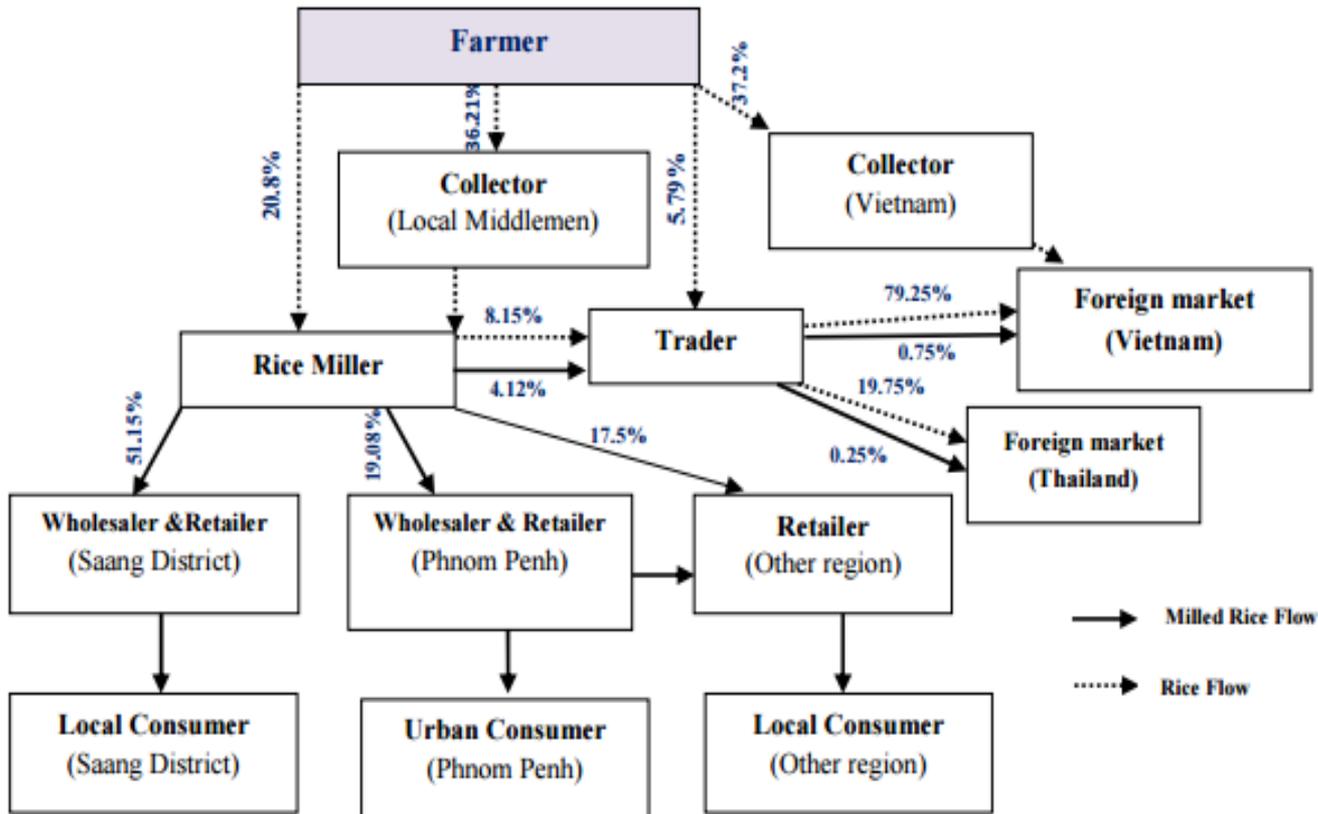


## SUPPLY CHAIN MAP FOR MILLED RICE





## SUPPLY CHAIN MAP FOR MILLED RICE



### PROCESSED RICE

- Rice Flour Products
- Noodles
- Wrappers
- Cakes
- Dumplings

### Liquid Rice Products

- Rice Bran Oil
- Beer & Wine
- Vinegar
- Milk

### Convenience Foods

- Cereals
- Crackers
- Canned
- Parboiled

### Other

- Starch

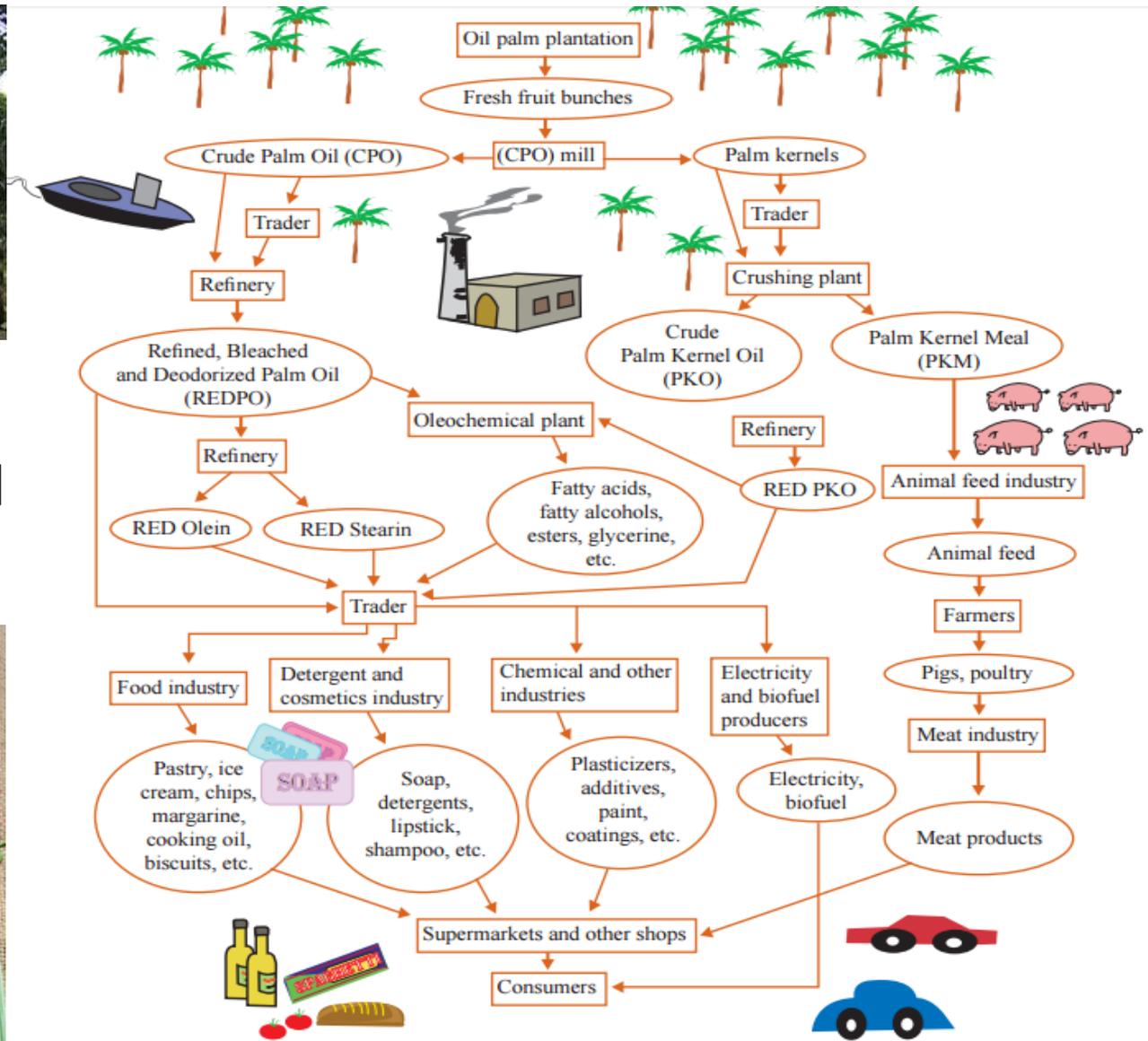


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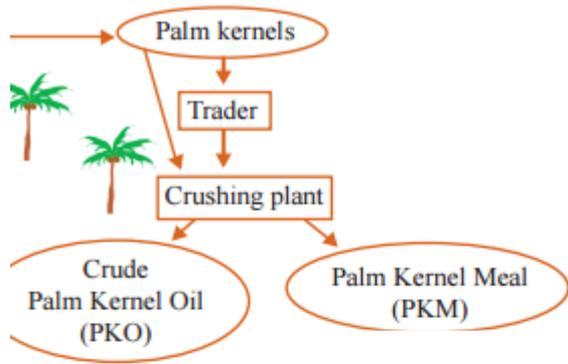
## COMPLETE VALUE STREAM FOR OIL PALM



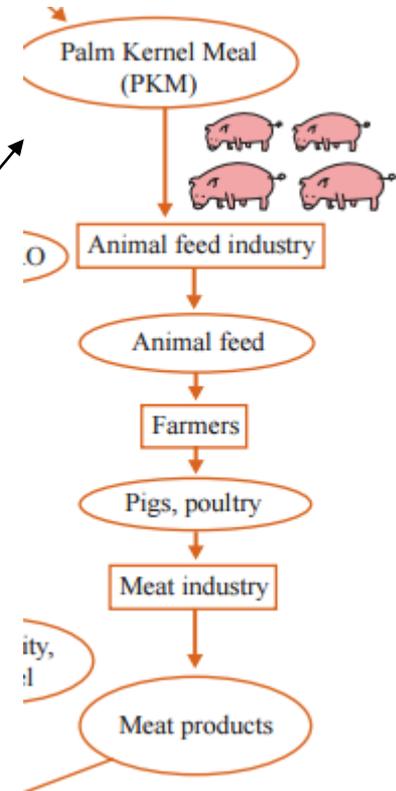


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**\*SUBSIDIARY  
VALUE CHAINS**





## WHICH FOOD SAFETY CHALLENGES TO ADDRESS IS NOT AN EASY DECISION

Objective criterion?

Relative severity of the hazard itself (in terms of human health effects)?

Potential to reduce prevalence?

Potential to reduce exposure?

Dose-response relationship?

Numbers of individuals at risk?



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Potential to reduce exposure?

Dose-response relationship?

Numbers of individuals at risk?

KPIs? (e.g. DALYs, QALYs)

Feasibility of measuring change?

Benefit/cost ratio of interventions?

Focus? (global, regional or domestic markets)

Highest Value Targets? (subsectors, clusters, value chains, industries)

Policy-maker preferences? (market access, crisis avoidance)



## FOODBORNE HAZARDS (2007-15) ASSESSED BY WHO

PDTF	CTTF	EDTF (HAZARDS CAUSING HEALTH EFFECTS OTHER THAN ENTERIC DISEASE)	EDTF (HAZARDS CAUSING ENTERIC DISEASE)
<i>Ascaris</i> spp.	Aflatoxin	<i>Brucella</i> spp.	<i>Bacillus cereus</i> <sup>1</sup>
<i>Echinococcus multilocularis</i>	Arsenic	<i>Clostridium botulinum</i> <sup>2</sup>	<i>Campylobacter</i> spp. <sup>2</sup>
<i>Echinococcus granulosus</i>	Cadmium	Hepatitis A virus	<i>Cryptosporidium</i> spp
<i>Clonorchis sinensis</i>	Cassava cyanide	<i>Listeria</i> spp.	<i>Clostridium perfringens</i> <sup>3</sup>
<i>Fasciola</i> spp.	Dioxin	<i>Mycobacterium bovis</i>	<i>Entamoeba histolytica</i>
Intestinal flukes <sup>4</sup>	Lead	<i>Salmonella enterica</i> (invasive infections) non-typhoidal	Enteropathogenic <i>E. coli</i> (EPEC)
<i>Opisthorchis</i> spp.	Methyl mercury	<i>Salmonella enterica</i> Paratyphi A	Enterotoxigenic <i>E. coli</i> (ETEC)
<i>Paragonimus</i> spp.	Peanut allergens <sup>5</sup>	<i>Salmonella enterica</i> Typhi	<i>Giardia</i> spp.
<i>Taenia solium</i>			Norovirus
<i>Toxoplasma gondii</i> <sup>6</sup>			<i>Salmonella enterica</i> (non-invasive infections) non-typhoidal
<i>Trichinella</i> spp.			<i>Shigella</i> spp.
			Shiga toxin-producing <i>E. coli</i> (STEC)
			<i>Staphylococcus aureus</i> <sup>1</sup>
			<i>Vibrio cholerae</i>

Key: PDTF = Parasitic Diseases Task Force;  
CTTF = Chemicals and Toxins Task Force; EDTF = Enteric Diseases Task Force



## OVERVIEW OF FOODBORNE HAZARDS (2010)

> **31 foodborne hazards** causing 32 diseases are included: 11 diarrheal disease agents (1 virus, 7 bacteria, 3 protozoa); 7 invasive infectious disease agents (1 virus, 5 bacteria, 1 protozoon); 10 helminths and 3 chemicals.

> Together, the 31 global hazards caused **600 million** (95% uncertainty interval [UI] 420–960m) **foodborne illnesses** and **420,000** (95% UI 310,000–600,000) **deaths**

> Diarrheal disease agents, particularly **norovirus** and **Campylobacter** spp were the most frequent causes of foodborne illness, causing 230,000 (95% UI 160,000–320,000) deaths, particularly from non-typhoidal **Salmonella enterica** (NTS), which causes diarrheal and invasive disease

> Other major causes of foodborne deaths were **Salmonella** Typhi, *Taenia solium*, **hepatitis A** virus, and **aflatoxin**

> **The global burden of foodborne disease by these 31 hazards was 33 (95% UI 25–46) million DALYs**



## EXAMPLES OF WELL-PUBLICIZED FOODBORNE DISEASE OUTBREAKS

1980s	1990s	2000s
<b>DEVELOPED COUNTRIES</b>		
Beef hormones (European Union) Salmonella in eggs and chicken (U.K.) Alarin apples (U.S.)	<i>E. coli</i> in hamburgers (U.S.) BSE* (U.K.) <i>Cyclospora</i> in raspberries (U.S., Canada) Dioxins in animal feed (Belgium)	Contaminated olive oil (Spain) <i>Staphylococcus</i> in milk (Japan) <i>E. coli</i> in spinach, carrot juice (U.S.) <i>Listeria</i> in ready-to-eat meat (Canada) <i>Salmonella</i> in peanut butter (U.S.)
<b>DEVELOPING COUNTRIES</b>		
Hepatitis A, raw oyster, 300,000 cases (Shanghai, China)	<i>Salmonella typhimurium</i> , more than 1,000 cases, meat products (Ningxia, China)	<i>E. coli</i> O157:H7, various animal foods, 20,000 cases, 177 deaths (Jiangsu and Anhui provinces in China) Melamine in milk (China) Maize contaminated with aflatoxins (Kenya)

\*Bovine spongiform encephalopathy.



## \*7 OF 10 TOP GLOBAL RETAILERS ARE IN THE FOOD BUSINESS

Top 10 retailers worldwide, 2013

Top 250 rank	Name of company	Country of origin	2013 Retail revenue (US\$mil)	2013 Retail revenue growth	2013 Net profit margin	2013 Return on assets	CAGR* Retail revenue 2008-2013	# countries of operation	% retail revenue from foreign operations
1	Wal-Mart Stores, Inc.	U.S.	476,294	1.5%	3.5%	8.2%	3.3%	28	28.9%
2	Costco Wholesale Corporation	U.S.	105,156	6.1%	2.0%	6.8%	7.7%	9	28.2%
3	Carrefour S.A.	France	98,688	-2.4%	1.8%	3.1%	-3.0%	33	52.7%
4	Schwarz Unternehmens Treuhand KG	Germany	98,662 <sup>e</sup>	9.5%	n/a	n/a	6.5%	26	58.2%
5	Tesco PLC	U.K.	98,631	-2.0%	1.5%	1.9%	2.9%	13	32.3%
6	The Kroger Co.	U.S.	98,375	1.7%	1.6%	5.2%	5.3%	1	0.0%
7	Metro Ag <sup>1</sup>	Germany	86,393 <sup>e</sup>	-2.5%	0.7%	1.4%	-0.9%	32	62.3%
8	Aldi Einkauf GmbH & Co. oHG	Germany	81,090 <sup>e</sup>	4.7%	n/a	n/a	5.5%	17	59.2%
9	The Home Depot, Inc.	U.S.	78,812	5.4%	6.8%	13.3%	2.0%	4	10.8%
10	Target Corporation	U.S.	72,596	0.9%	2.7%	4.4%	2.9%	2	1.8%
<b>Top 10<sup>2</sup></b>			<b>\$1,294,698</b>	<b>2.0%</b>	<b>2.8%</b>	<b>6.0%</b>	<b>3.0%</b>	<b>16.5<sup>3</sup></b>	<b>32.5%</b>
<b>Top 250<sup>2</sup></b>			<b>\$4,354,562</b>	<b>4.1%</b>	<b>3.4%</b>	<b>5.3%</b>	<b>4.2%</b>	<b>10.2<sup>3</sup></b>	<b>24.2%</b>
<b>Top 10 share of Top 250 retail revenue</b>			<b>29.7%</b>						

\*Compound annual growth rate

<sup>1</sup> Metro changed its fiscal year from end of December to end of September. Fiscal 2013 results reported here include the 9 months ended 30 September 2013 plus the quarter ended 31 December 2013 to create a 12-month period equivalent to prior years.

<sup>2</sup> Sales-weighted, currency-adjusted composites

<sup>3</sup> Average

e = estimate

n/a = not available



## \*THE “SUPERMARKET” PHENOMENON

- ◆ Global food retail sales in 2014 were about \$4 trillion annually, with supermarkets/hypermarkets accounting for the largest share of sales
- ◆ Although Walmart first entered food marketing in the early Nineties, by 2014 it had become the largest retailer by far, with 11,100 stores in 27 countries, and annual sales of \$483 billion (4-7 times as much as COSTCO, Kroger, Carrefour, Tesco, Target, and other well-known chains).
- ◆ More than half of Walmart sales volume is derived from what would traditionally have been called groceries (including consumer product goods and fresh meat, produce, and seafood)



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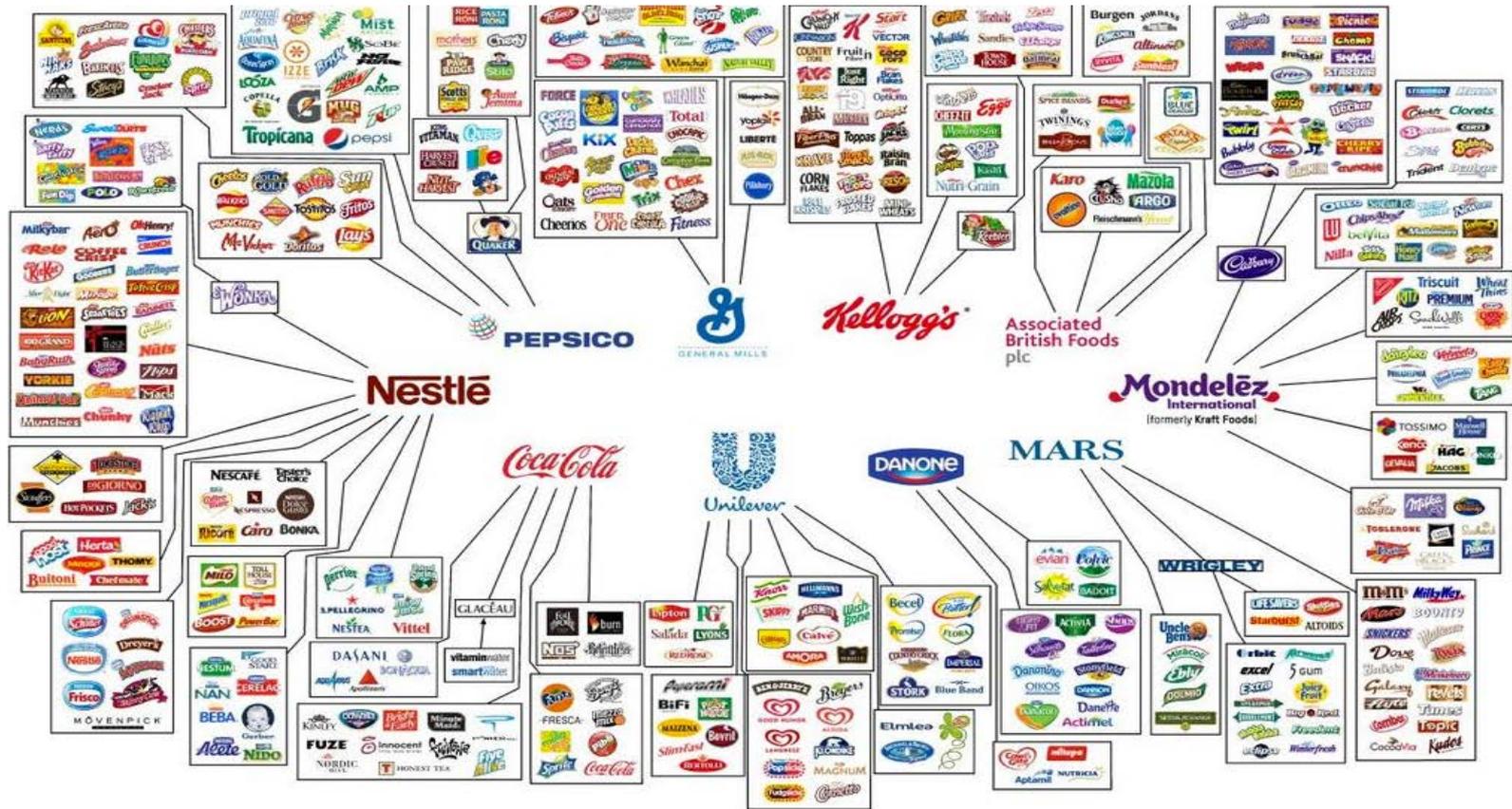
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- ◆ More than half of Walmart sales volume is derived from what would traditionally have been called groceries (including consumer product goods and fresh meat, produce, and seafood)
- ◆ Walmart’s explosive growth caused waves of mergers among grocery chains so by 2014 the top 15 global supermarket companies accounted for more than 30 percent of world supermarket sales
- ◆ Walmart’s vision, philosophy and business practices have arguably been the single most important driver of change in the global agrifood sector



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## \*CHANGING STRUCTURE: CONSOLIDATION AMONG MAJOR CPG FIRMS

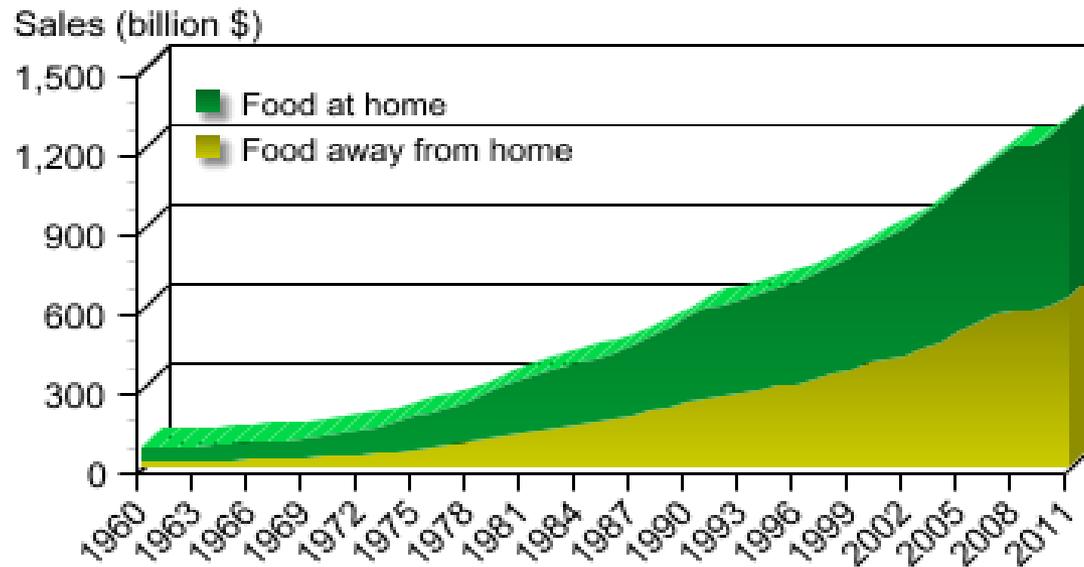




## \*CHANGING STRUCTURE: RISE OF FOODSERVICE INDUSTRY

### Sales of food-at-home and away-from-home, 1960-2011

Food-away-from-home sales grew more quickly than food-at-home sales over the last half century, but both grew at similar rates during and after the 2007-09 recession



Source: USDA, ERS, Food Expenditure Tables: Table 1



## \*RISE OF FOODSERVICE INDUSTRY

In 2010, the U.S. food marketing system, including food service and food retailing, supplied about \$1.24 trillion worth of food.

Of this total, \$594 billion was supplied by foodservice facilities.

Commercial foodservice establishments accounted for the bulk of food-away-from-home expenditures in 2010.



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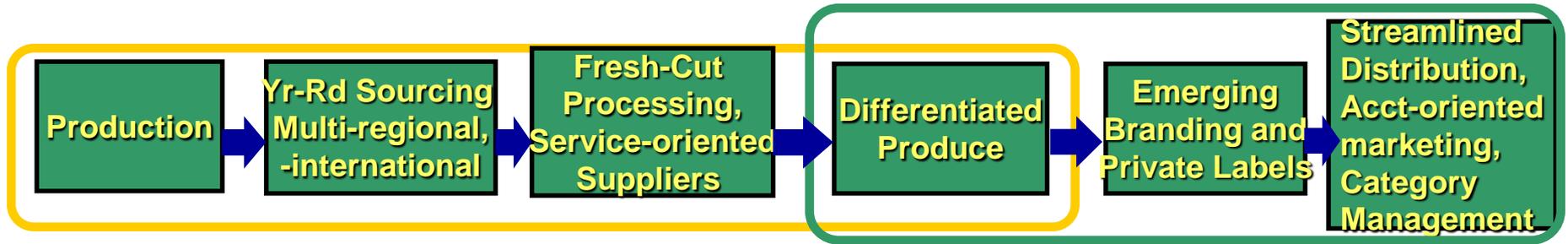
This category includes full-service restaurants, fast food outlets, caterers, some cafeterias, and other places that prepare, serve, and sell food to the general public for a profit.

Some are located within facilities that are not primarily engaged in dispensing meals and snacks, such as lodging places, recreational facilities, and retail stores.

The hotel/restaurant/institutional retailing channels in Asia are following similar patterns, giving rise to broadline as well as specialized purveyors



## \*PROCUREMENT PRACTICES



**Grower/Shipper-Controlled,  
Cost Driven**

bananas,  
pineapples

Branded packaged  
freshcut salads and  
fruit

**Retailer-controlled,  
Revenue Driven**

salad bars,  
consumer packs



## \*POINT OF DEPARTURE: WHAT BUYERS WANT

Quality and consistency of supply...



## \*POINT OF DEPARTURE: WHAT BUYERS WANT

Quality and consistency of supply...

...of product that is compliant with applicable official  
sanitary or phytosanitary (SPS) standards



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Quality and consistency of supply...

...of product that is compliant with applicable official sanitary or phytosanitary (SPS) standards

...also meets or exceeds the specifications and procurement terms of the market-maker



## \*POINT OF DEPARTURE: WHAT BUYERS WANT

Quality and consistency of supply...

...of product that is compliant with applicable official sanitary or phytosanitary (SPS) standards

...also meets or exceeds the specifications and procurement terms of the market-maker

...shipped in largest possible volumes



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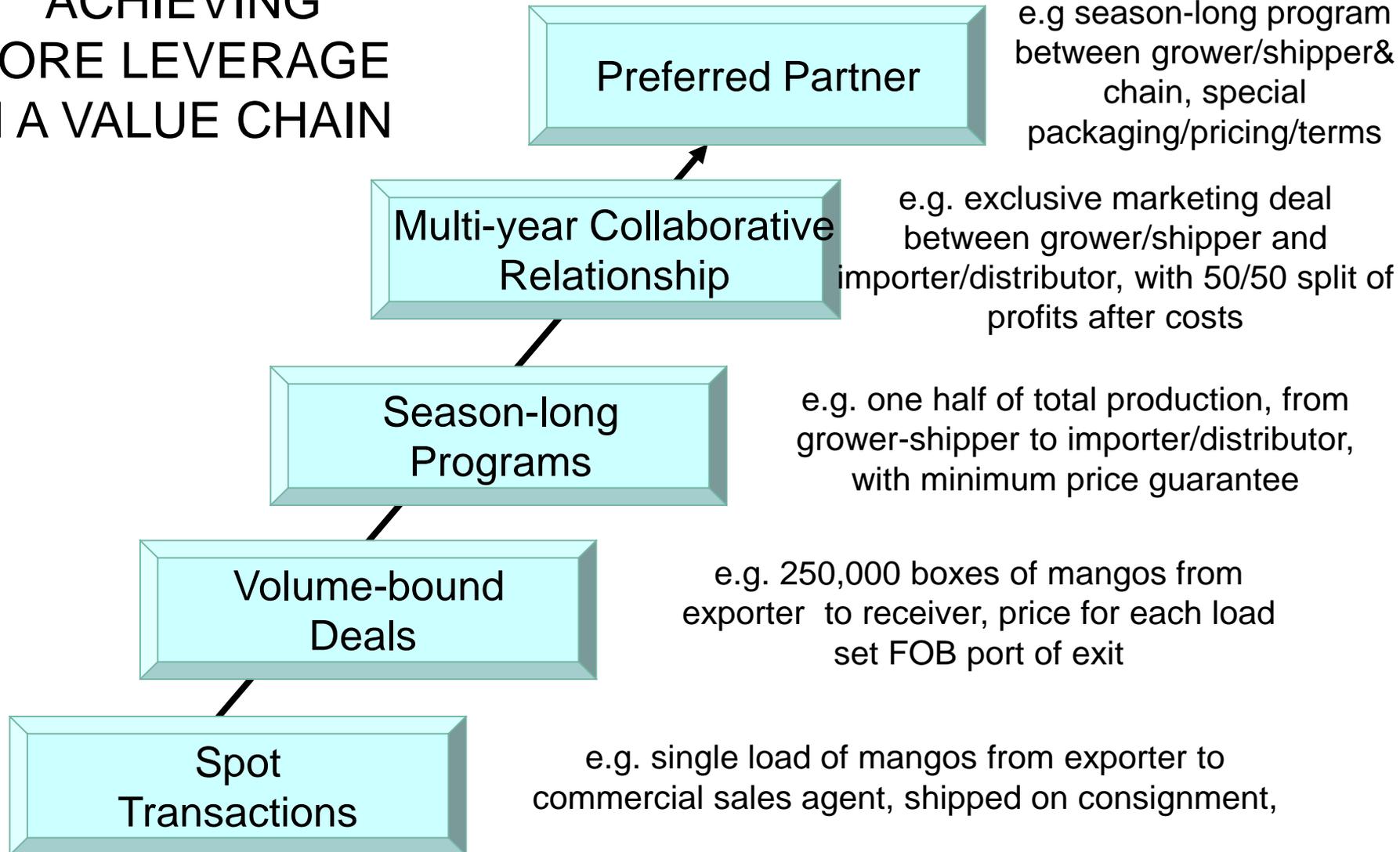
...and delivered at competitive cost



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

## \*ACHIEVING MORE LEVERAGE IN A VALUE CHAIN





## \*PROS AND CONS OF SOURCING FROM SMALL VERSUS LARGE SUPPLIERS

SMALL-SCALE PRODUCERS	
STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Comparative advantage in managing labor-intensive production activities</li> <li>• Self-supervision, motivation, etc.</li> <li>• Local knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Small-sized holdings, lacking economies of scale</li> <li>• Diversified production in small areas as a risk management strategy; yet, this strategy limits their possibilities to commercialize surplus production</li> <li>• Nonproximity to the market</li> <li>• Education standards that are often low</li> <li>• Reluctant to introduce new technology</li> <li>• Difficulty in obtaining information, capital, and support</li> <li>• Weak in negotiation, often lacking confidence, especially when dealing with traders and companies</li> <li>• Adverse to risk (rightly)</li> <li>• Need income stability and cannot afford losses</li> <li>• Often on inferior land, without access to irrigation</li> </ul>
LARGE-SCALE PRODUCERS	
STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Skilled labor</li> <li>• Market knowledge</li> <li>• Technical knowledge</li> <li>• Inputs purchase</li> <li>• Finance and capital</li> <li>• Land</li> <li>• Output markets</li> <li>• Product traceability and quality and safety assurance</li> <li>• Risk management</li> </ul>	<ul style="list-style-type: none"> <li>• High overhead cost</li> <li>• Poor at motivating and instilling a sense of ownership for large numbers of laborers</li> <li>• Poor at servicing small and niche markets</li> </ul>

Source: Poulton et al 2004; TechnoServe 2005



## \*FACTORS THAT INFLUENCE PROCUREMENT FROM SMALL VS LARGER SUPPLIERS

PRODUCT AND MARKET CHARACTERISTICS	PRODUCTION AND MARKETING FUNCTIONS	INTERNAL RESOURCES	EXTERNAL RESOURCES
<ul style="list-style-type: none"> <li>• Unit value</li> <li>• Perishability</li> <li>• Technical complexity of production</li> <li>• Stringency of standards</li> <li>• Size and dynamism of market</li> <li>• Competitiveness of local and international markets</li> <li>• Nature and rate of change in value chain structure and <i>modus operandi</i></li> </ul>	<ul style="list-style-type: none"> <li>• Supply of minimum volumes</li> <li>• Consistency, timing, and duration of supply</li> <li>• Adherence with basic quality grades</li> <li>• Application of prescribed production practices</li> <li>• Production process certification</li> <li>• Adherence with maximum residue levels for pesticides</li> </ul>	<ul style="list-style-type: none"> <li>• Agro-climatic suitability of growing conditions</li> <li>• Quantity and quality of land</li> <li>• Irrigation capacity</li> <li>• Production tools and equipment</li> <li>• Communications equipment</li> <li>• Skills and expertise</li> <li>• Recording-keeping systems</li> <li>• Pesticide application equipment and facilities</li> <li>• Postharvest handling facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Roads infrastructure</li> <li>• Communications infrastructure</li> <li>• Airport and seaport capacity</li> <li>• Certification services for private standards</li> <li>• Laboratory testing services</li> <li>• Certification capacity</li> <li>• Regulations</li> <li>• Public and private standards</li> <li>• Surveillance systems</li> </ul>



## \*KEY QUESTION: SHOULD USAID PROJECTS CONSTRUCTIVELY ENGAGE WITH TRADERS?

### Ag traders oft criticized for:

- >Oligopsony
- >Price fixing or gauging
- >False weights/measures
- >Excessive penalties for defects
- >Slow payment
- >Loan sharking
- >Exploiting the weak
- >Lack of transparency

### Some people want to:

- >Curb supposed excesses
- >Regulate the traders
- >Strengthen hand of smallholders
- >Eliminate all middlemen
- >Shorten supply chains
- >Encourage direct sourcing



## \*HOW DEFINE A TRADER?

- **Any economic actor (person, firm, or organization) in a supply chain who procures agricultural products, whether for:**
  - Own use
  - Re-sale to another middleman or to consumers in a market (local or distant)
  - Delivery to another handler
  - Delivery to a processor
  - Delivery to a wholesaler
  - Delivery to a retailer
  - Export
- **Procurement may be for the producer, for the trader's own account, or for another actor (e.g. trader, user, consumer) who takes title and/or possession**



## \*WHAT IS THE CORE VALUE PROPOSITION OF A TRADER?

Contribute/realize value by investing and taking risks while changing the attributes (identity, quantity, condition, form, presentation), availability, and/or location of agricultural products, e.g.

- >Collecting and aggregating small volumes
- >Sorting product by type, variety, source, etc
- >Culling product that has tangible visual defects
- >Testing product for intangible attributes such as moisture
- >Sorting first quality product by size, shape, color, etc
- >Finding a market for second quality product or rejects



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- >Finding a market for second quality product or rejects
- >Curing then holding less perishable products
- >Pre-cooling or refrigerating product
- >Minimal processing
- >Improving convenience of presentation
- >Moving products from source area to distribution centers or end-markets
- >Promoting and merchandising products, even branding



## \*ANCILLARY VALUE THAT A TRADER MAY OFFER

- Technical know-how in crop production or post-harvest handling
- Provision of seeds, agrochemicals, packing and packaging materials in kind
- Pre-season advances or in-season credit to farmers
- Provision of spraying, animal traction, mechanization or other services that support the production cycle
- Investment or co-investment in fixed assets (e.g. packing shed or hot water treatment plant)
- Committing to buy product under certain conditions
- Bankable purchase agreement that serves as collateral for bank financing
- Marketing know-how and know-who
- Personal loans (e.g. for school fees, health problems, other contingencies)
- **Support for safer, more nutritious, more sustainable food sourcing**

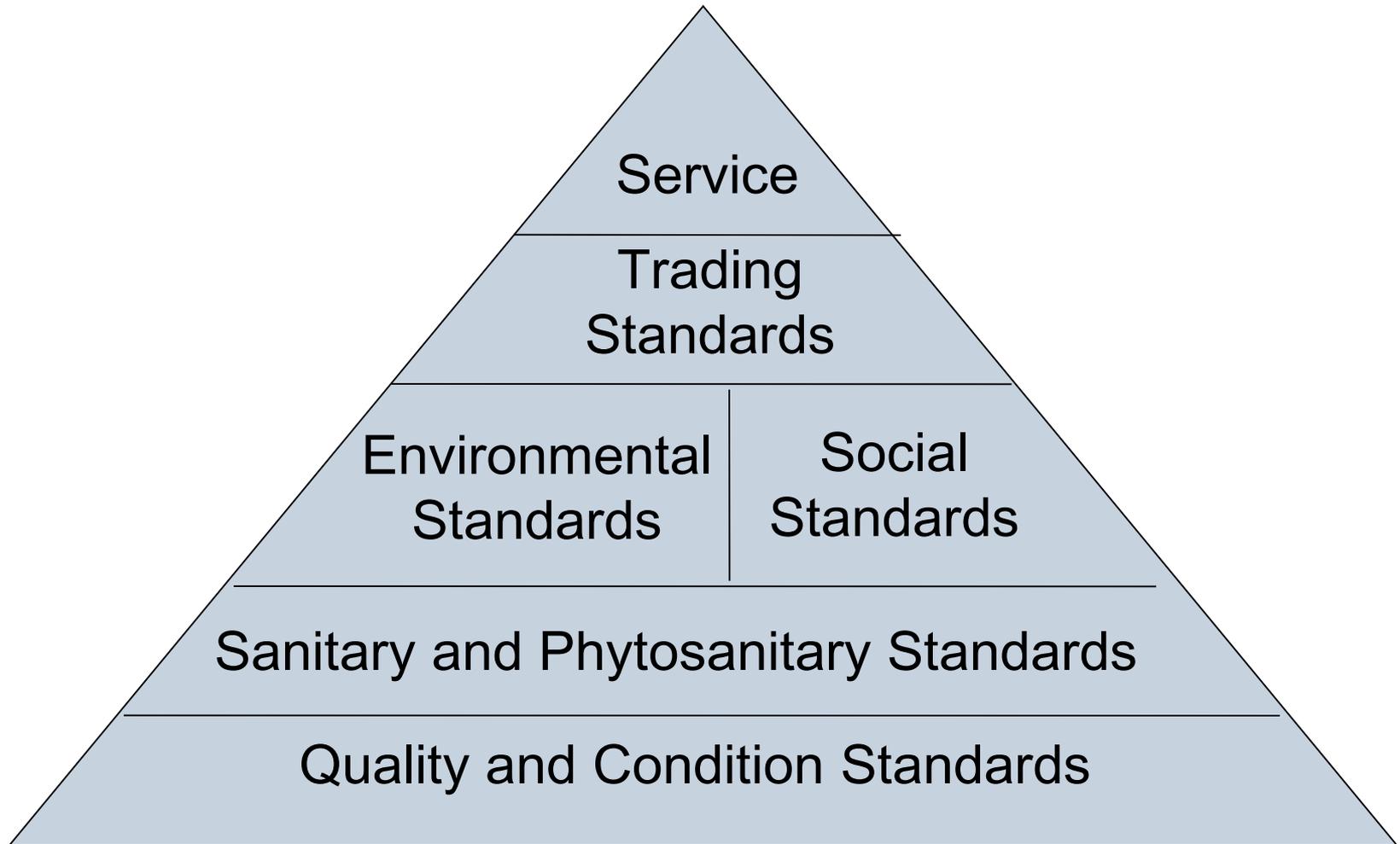


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## \*INCREASING EMPHASIS ON ASSURED COMPLIANCE





## \*GRADES, STANDARDS, & SPECIFICATIONS FALL INTO SEVERAL CATEGORIES

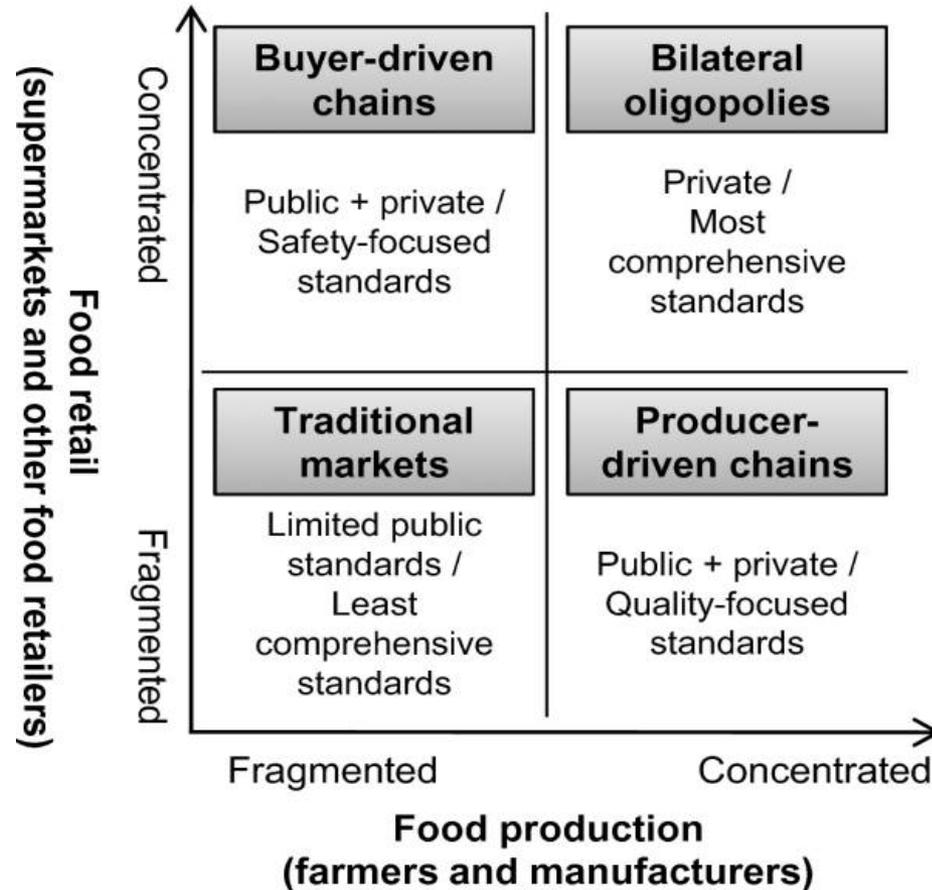
**Product attributes: e.g. species, type, variety, size, count, use of PLU stickers, color, maturity, sugar level, cosmetic appearance, organoleptic attributes, presentation, etc**

**Process attributes: e.g. source, origin, COOL, scale, production system, pesticides, GAP/GMP application, HACCP, labor conditions, certifications, traceability, etc**

**Transactional attributes: e.g. palletization, markings, barcoding, RFID, loading patterns, delivery time/place, crossdocking, recovery of pallets, rhythm of deliveries, duration and consistency of supply, handling of problem loads, etc**



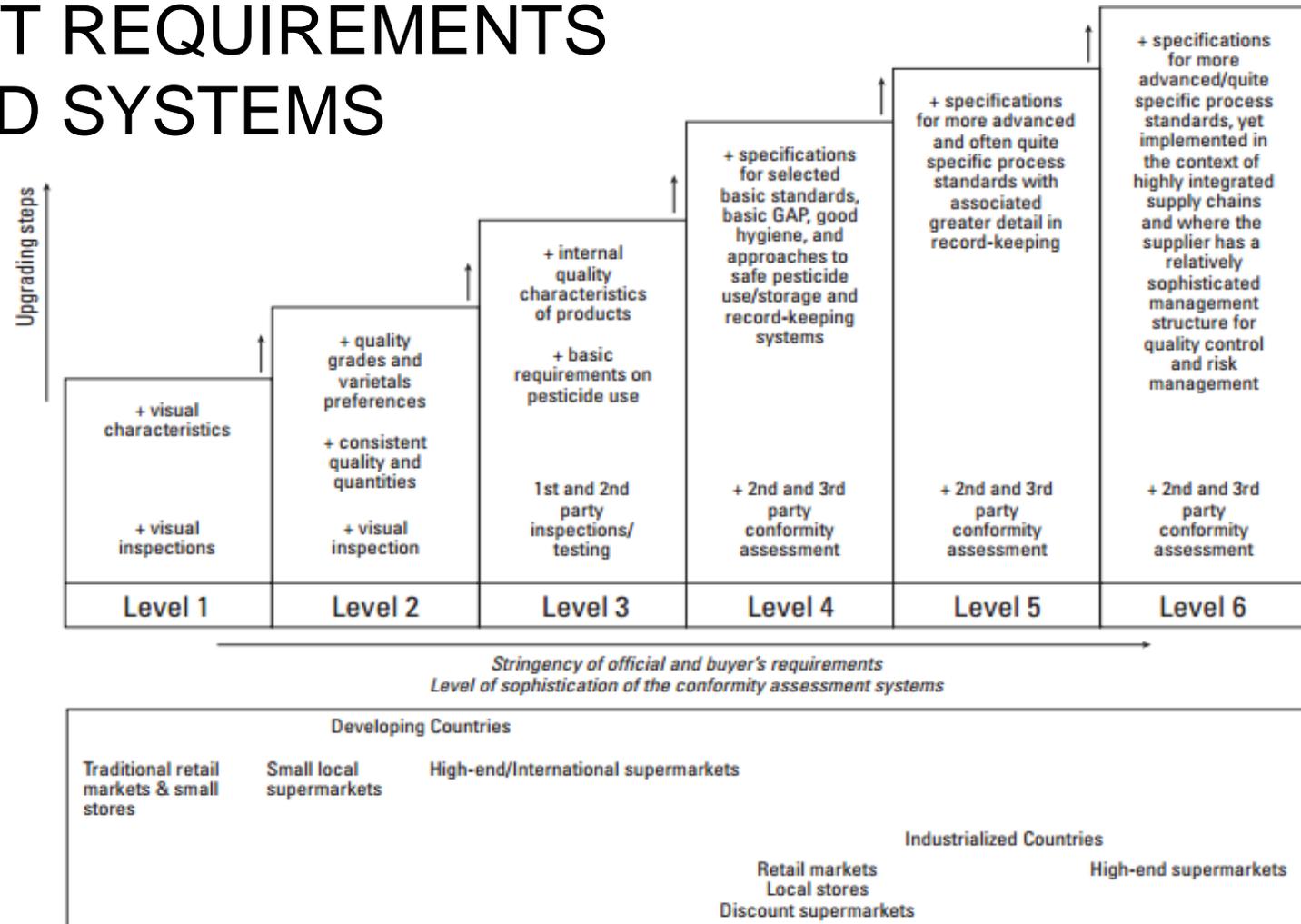
## \*CONCENTRATION VS FRAGMENTATION IN ADOPTION OF AGRIFOOD STANDARDS



Source: Lee et al, Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries, 2012



## \*SPECTRUM OF REGULATORY AND MARKET REQUIREMENTS IN AGRIFOOD SYSTEMS

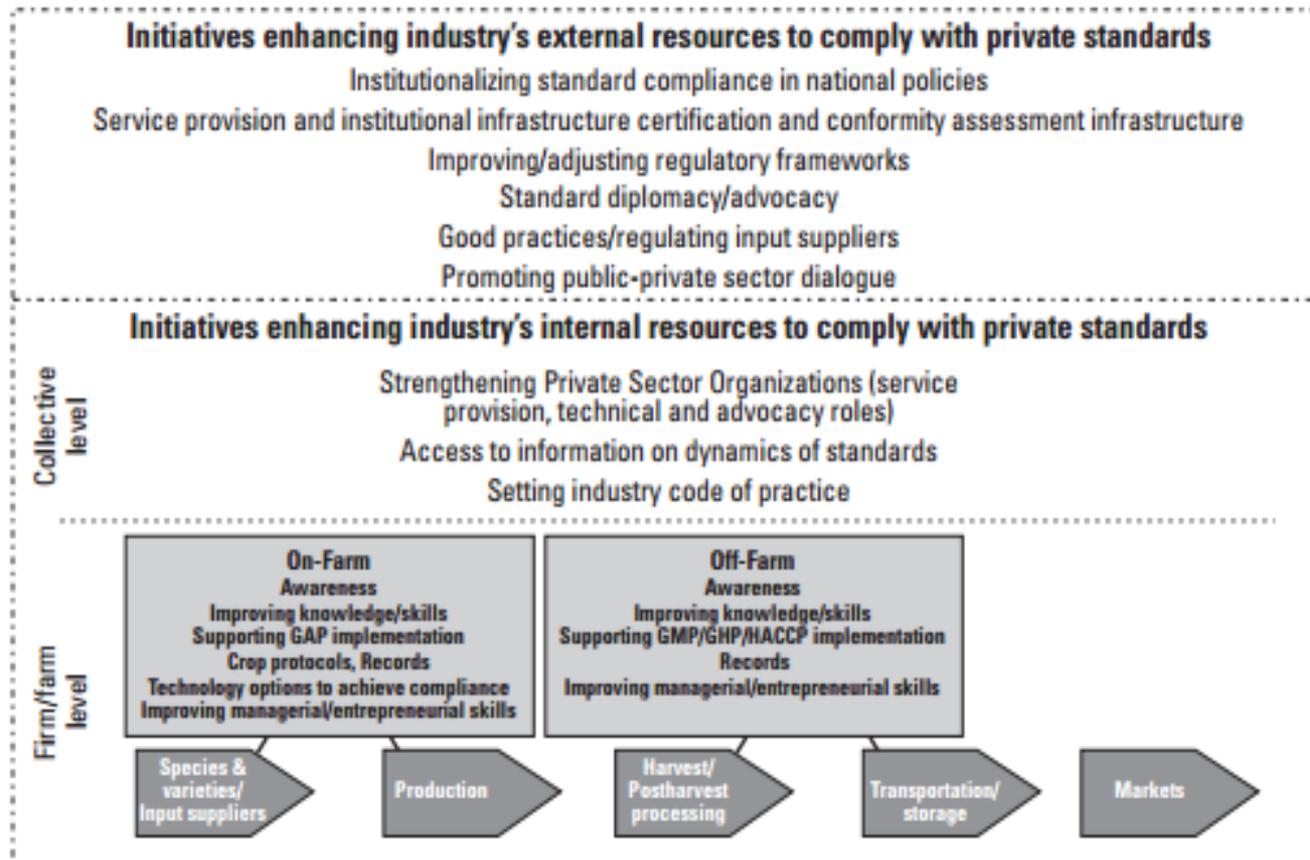


Source: The Authors.

Source: Jaffe, Henson and Rios, 2011



## \*ENHANCING CAPACITY TO COMPLY WITH PRIVATE AGRIFOOD STANDARDS





## RECAP OF WAYS TO IMPROVE VALUE CHAIN WORK

- Recognize that procurement decisions turn on the holy grail of sourcing
- Consider volume, value and costs all together
- Become familiar and work with as much of the value stream as possible, not just the predominant value chain, to maximize whole chain impact
- Adopt a whole chain approach, starting from market-makers and moving back upstream, not from producers downstream



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- Adopt a whole chain approach, starting from market-makers and moving back upstream, not from producers downstream
- With market intermediaries, recognize their functions, value added, risks, incentives and disincentives, then constructively engage
- Help producers to gain stacked competitive advantage, first through compliance, next higher productivity, then enhanced leverage within targeted supply chains, and finally diversification/expansion/upgrading
- Use focus groups, trade associations and industry associations to gain informed views on how to improve the enabling environment, then engage



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*Thanks for your attention and participation!*

John E. Lamb

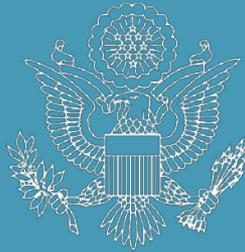
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# FEED<sup>THE</sup>FUTURE

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[www.feedthefuture.gov](http://www.feedthefuture.gov)



## ROUND 1 QUESTIONS FOR DISCUSSION

- (1) In your domestic markets, what are the main food safety risks of concern?
- (2) To what extent has food safety figured in your program, and where it has, for only high value markets or also domestic? What challenges did you face? What did you learn?
- (3) Do you think that it is better for USAID to focus on upgrading the entire food safety system or addressing selected high priority risk categories



## ROUND 2 QUESTIONS FOR DISCUSSION

- (4) Is it possible to deal with food safety for domestic markets alone, without any connection or reference to exported and imported products?
- (5) Do you think that USAID should address food safety challenges mainly by (a) supporting risk-based technology and solutions, (b) working with government on policies and regulations, or working with (c) private sector actors in priority value chains?
- (6) Assuming you would like to increase and improve programming in this area, what constraints to overcome and what gaps to fill?