

# Building an enabling environment for food safety in informal markets in India and Vietnam: the role of capacity strengthening

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# Outline

- ❖ Introduction
- ❖ Framework
- ❖ Case studies in India and Vietnam
- ❖ Findings and interpretation

# Introduction

## ❖ Policy issues on food safety in informal markets

- Food safety policy favors large, formal agro-food sectors over traditional, informal sector which is dominant in perishable food markets especially in developing country context
- Food safety policy has implications on both public health and economic and trade objectives
  - Informal markets as sources of many foodborne diseases
  - Compliance with food safety standards a pre-requisite to access high-value export markets

## ❖ Policy responses

- Top down, command and control approach
- Emphasis on hazards (how dirty is it?) rather than risks (will it make me sick?)
- Focus on technical solutions notwithstanding existing capacity (and incentives) to comply

# Framework (adapted from Gillespie et al. 2013)

	Issues and challenges in:	
	Creating and sustaining momentum	Conversion of momentum into results
<b>Framing, generation and communication of knowledge and evidence</b>	<b>Where food safety is on the agenda, policy responses are often inappropriate so there is a need to provide evidence to challenge existing narratives, eg about formal=safe, informal=unsafe. (Box 1 )</b>	<b>Evidence on effectiveness of capacity building interventions, in pilots and at scale. (Box 4)</b>
<b>Political economy of stakeholders, ideas and interests</b>	<b>Often high priority for economic and trade groups; priority for civil society highly variable (Box 2)</b>	<b>Coherence across scale of government could be important since local level implementation and adaptation of schemes will likely be necessary. (Box 5)</b>
<b>Capacity and financial resources</b>	<b>Risk-based approaches may be the policy, following international standards, but they may not be implemented due to lack of capacity, finances or political will. (Box 3)</b>	<b>Capacity building among traders can be basis for effective intervention; interventions not be completely financially self-sustaining (Box 6)</b>

# Background to the case studies

## ❖ India dairy

- Pilot-testing the ILRI model for training and certification of informal milk traders
- Establishing a new governance institution (Joint Coordination and Monitoring Committee) to scale up training and certification

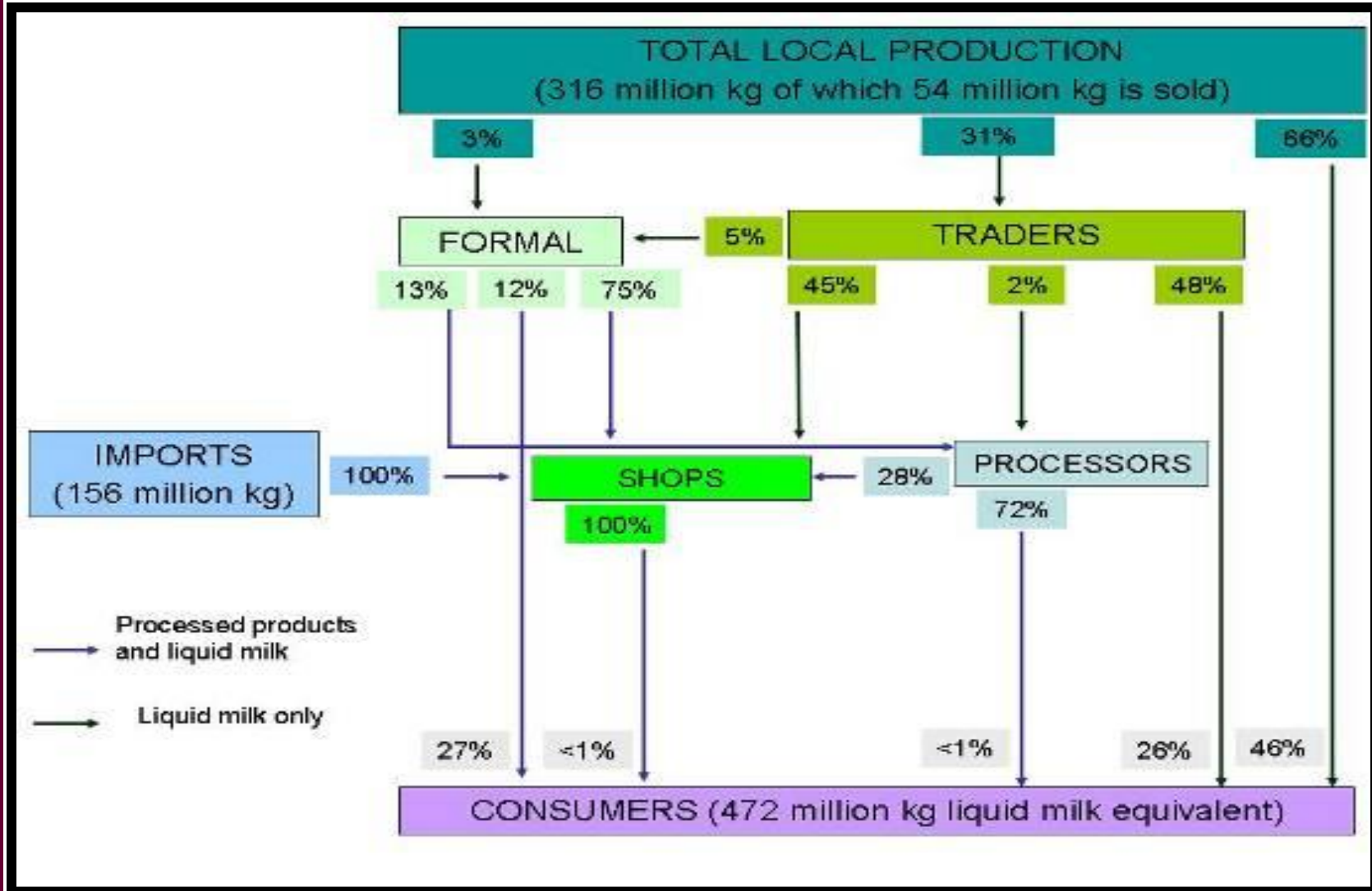
## ❖ Vietnam pork

- Participatory risk assessment of the pork value chain in peri-urban Hanoi, in response to emerging food safety concerns associated with informal markets for fresh meat (e.g., results from ILRI studies on smallholder competitiveness in pigs in Vietnam)
- Identified gap in capacity for risk assessment for evidence generation and informed policy making

# Case Study: Dairy sector in Assam, Northeast India

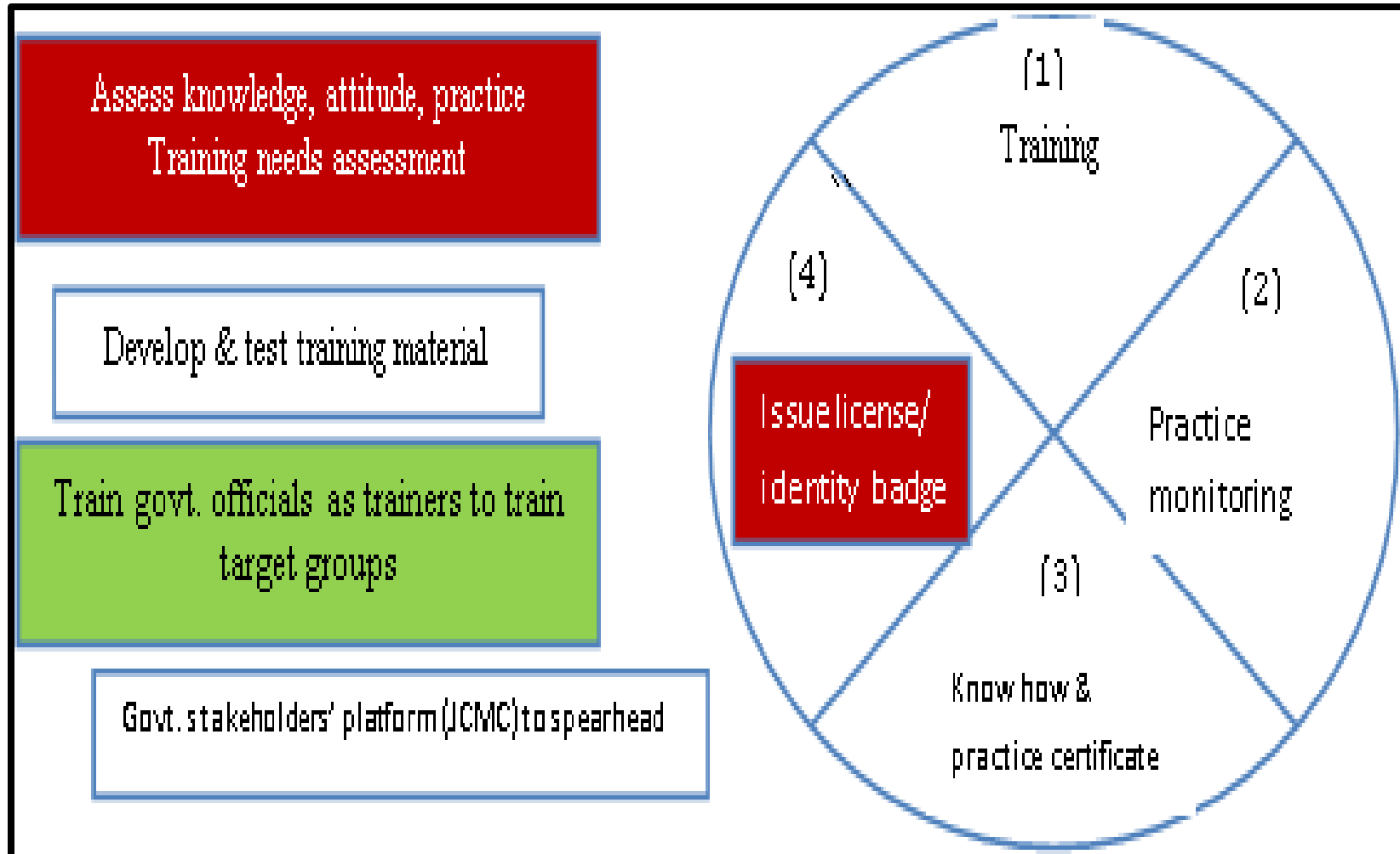
- ❖ Traditional dairy systems are predominant in Assam, one of the poorest states in NE India.
- ❖ The traditional milk market comprises 97% of the total milk produced and marketed; only 3% is channeled through the formal, organized processing channel. Local producers on average only sell some 17% of the milk they produce through direct sales to consumers (66% of local milk markets); 31% is sold through informal milk traders.
- ❖ The predominance of traditional or informal milk and dairy product market agents in Assam highlight the importance of these agents as the key link between local milk producers and consumers.
- ❖ There is growing concern about milk hygiene and quality as demand for milk rises in the state. Consumers (particularly those in urban areas) have expressed concern about the quality of local fresh milk that are supplied by milk traders.

# Milk and dairy product flow, Assam (ILRI 2007)



Source of data: ILRI-WB survey, 2007.

# The action research: model for improving traditional dairy sector





# Research Questions

- ❖ How does training and certification of informal dairy chain actors change knowledge, behavior and milk quality/safety outcomes?
- ❖ How does participation in the training and certification scheme translate into livelihood benefits for milk value chain actors and reduced health risks for dairy consumers?
- ❖ How can sustainability be assured? What incentives are necessary to motivate participation in training and certification? How can the system be self-financing and credible?
- ❖ What are the economy-wide impacts of these programs? What are the overall costs and benefits of the initiatives? Who gets the benefits and who pays the costs?

# Evaluation of economic and food safety Impacts

Traders and exposure to training: comparing outcomes between milk traders who have undergone training and milk traders who have not undergone training in the exposed site (Kamrup), baseline and current

Producers and exposure to training: comparing outcomes between producers who have undergone training and producers who have not undergone training in the exposed site (Kamrup), baseline and current

Hypotheses:

- Training in milk handling will have precipitated changes in milk handling practices that are then rewarded by consumers with either higher prices or more quantity sold.
- Increased prices or higher volume of sales are hypothesized to have been engendered by the consumer recognition of improved milk quality and safety from better trained milk traders.

## Food safety-associated outcomes

- ❖ Improved milk handling practices by milk vendors and producers.
- ❖ Increased incidence of reported satisfaction with milk quality (e.g., longer shelf life/lower spoilage rate, absence of odor)
- ❖ Higher levels of water in milk samples tested indicative of adulteration; absence of other adulterants, e.g., chemical.
- ❖ Microbial quality observed to vary widely, i.e., in aerobic as well as coliform count of the milk samples in different dilutions. Some samples showed microbial load in normal range while many others showed higher microbial load, suggesting contamination during milking or post milking caused by poor handling and/or dirty utensils and surrounding.

# Indicators of economic benefits from training and certification

- ❖ Training has positive economic benefit to milk traders (higher average margins relative to all traders in exposed site, and traders in control site).
- ❖ Milk traders with training generate average profit margins of 0.62 rupees/liter of milk sold in control site and 1.25 rupees/liter of milk sold in exposed site; incentives to training.
- ❖ Relative shares of producer and trader prices in milk retail prices, on average, also suggest that the market for traditional dairy is efficient in sites that were covered by the study.
- ❖ Value added estimates from traditional dairy value chain are 6.62 rupees/liter in control site, and 5.64 rupees/liter in exposed site => economic incentives from traditional dairy
- ❖ At about 0.8 million rupees value added generated per day in traditional dairy value chain, annual estimate of economic impact in Kamrup is at least US\$ 5.6 million => potential for pro-poor development

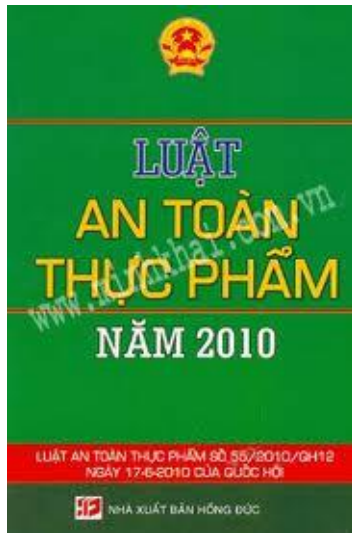
## Case study: Vietnam pork

- ❖ Changing nature of food demand in Vietnam is driven by increasing affluence and urbanization.
- ❖ Dietary patterns shifting from predominantly starch-based to increasing proportion of animal-sourced food.
- ❖ Consumers becoming more discriminating, increasingly demanding quality and safety attributes, emergence of product and price differentiation, and WTP for such attributes.
- ❖ Restructuring of food retail sector in response to food demand changes, and anticipation of likely dominance of modern agri-food sector and contraction of traditional food retail sector.
- ❖ Modern retail outlets are increasingly being used by more affluent, busy, mobile urban consumers.

## Case study: Vietnam pork

- ❖ Traditional market outlets still account for 80% of sales even in urban cities in Vietnam; also strong links with market intermediaries supplied by smallholders.
- ❖ Traditional tastes and preferences remain important considerations in purchase decisions, e.g., preference for 'warm' meat by Vietnamese consumers; this is true for pork that accounts for at least four-fifths of meat consumed by Vietnamese consumers.
- ❖ Quality (freshness) and affordability (lower prices) are perceived to be main attractions of traditional market outlets.
- ❖ Perception that informal is unsafe and frequent target of blame for foodborne illness and food scares.

# Enabling environment and demand for risk assessment



**Law of Food Safety (in effect since 7.2011)**

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Độc lập - Tự do - Hạnh phúc

Số: 518/QĐ-TTg

Hà Nội, ngày 27 tháng 3 năm 2013

## QUYẾT ĐỊNH

Về việc phê duyệt Đề án xây dựng hệ thống cảnh báo nhanh và phân tích nguy cơ về an toàn thực phẩm tại Việt Nam

CÔNG THÔNG TIN ĐIỆN TỬ CHÍNH PHỦ

**Decision of Primer Minister 3.2013  
“Rapid detection system for food safety and risk analysis”**

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Hà Nội, ngày 05 tháng 01 năm 2013

## THÔNG TƯ

Quy định phân tích nguy cơ và quản lý an toàn thực phẩm theo chuỗi sản xuất kinh doanh nông lâm thủy sản và muối

**Circular of MARD 5.2013  
“RA in food safety management”**

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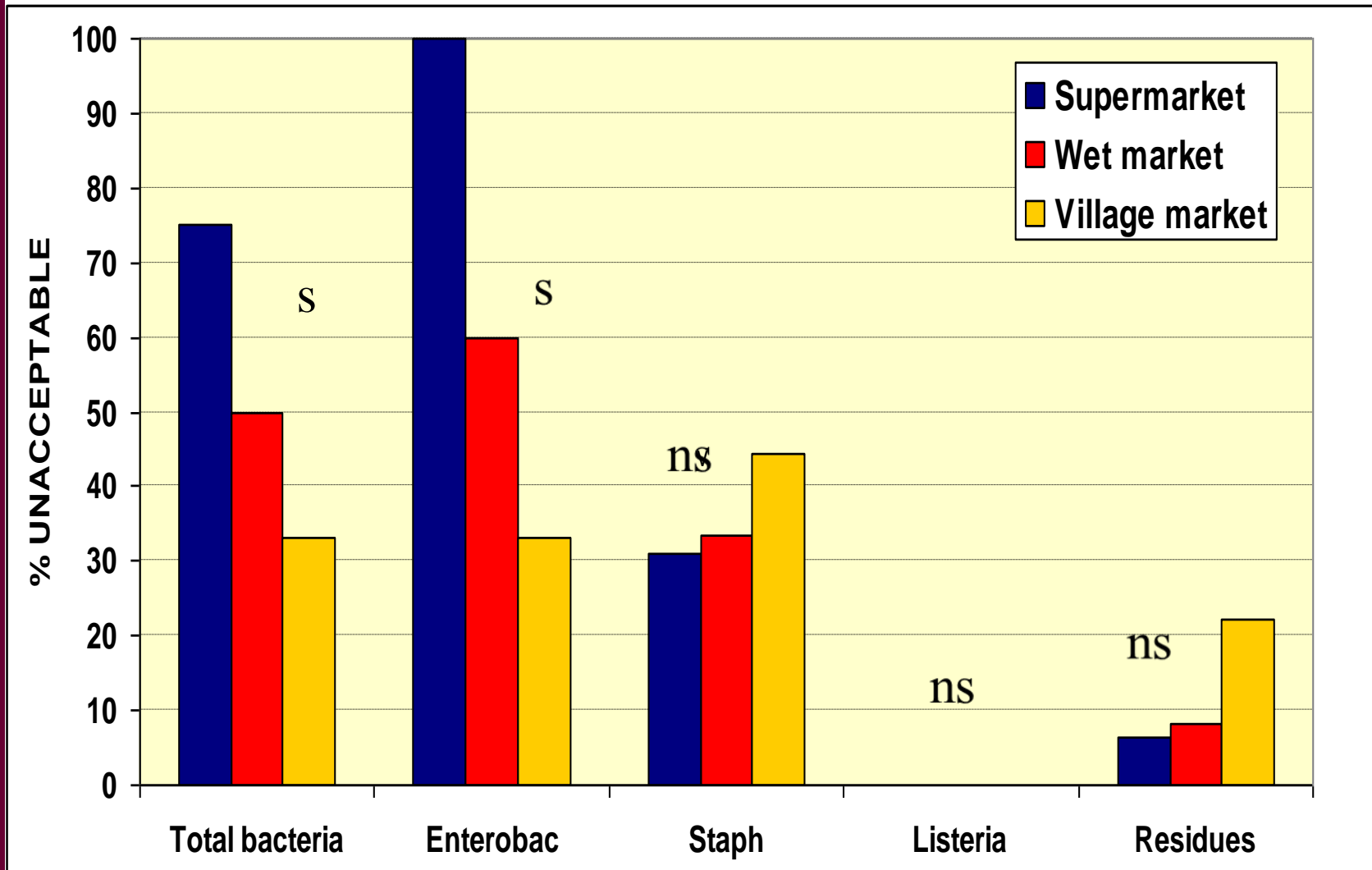
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# Hazard Assessment (12 hazards)

<b>Hazard</b>	<b>Hazard characterisation</b>	<b>Present</b>	<b>Unacceptable</b>
<b>Total bacteria</b>	<b>Cause spoilage and disease</b>	<b>70%</b>	<b>52%</b>
<b>Enterobacteriaceae</b>	<b>An indication of faecal contamination Many food-borne diseases are transmitted through</b>	<b>86%</b>	<b>62%</b>
<b>Staphylococcus aureus</b>	<b>One of the big 10 food-borne diseases. Bacteria produce toxins which are not destroyed by cooking. A good indicator of bad-handling</b>	<b>40%</b>	<b>24%</b>
<b>Listeria monocytogenes</b>	<b>One of the big 10 food-borne diseases. Causes septicaemia, abortion</b>	<b>24%</b>	<b>0%</b>
<b>Antibiotic residues</b>	<b>Can cause reactions in sensitive people Fosters development of resistance in bacteria affecting humans. Many are not destroyed by cooking</b>	<b>9%</b>	<b>9%</b>



# Hazard Assessment



Source of data: ILRI-ACIAR survey, 2009.

# Risk assessment

- ❖ Low incidence of self-reported gastro-intestinal illness
  - 6.5% of households report illness last 6 months
  - 1.3% of households report illness last month
  - (possible under-reporting, but.....)
  
- ❖ High level of risk mitigating practice
  - 100% of respondents cooked food within 3 hours of purchase
  - 98% cooked for >10 minutes
  - 99% report hand washing
  - 58% keep in fridge

# Risk assessment

- ❖ Consumption of pork does not predict illness
- ❖ Consumption of other meat does not predict illness
- ❖ Consumption of vegetables strongly predicts illness
  - Healthy households 1.6kg veggies a week
  - Sick households 3.1 kg veggies a week  
 $p=0.03$
- ❖ Household practices also predict illness ( $p<0.05$ )
  - Eating leftovers w/o reheating (Odds ratio 6)
  - Good hand washing practice(Odds ratio 0.12)
  - Having animals in the hh (Odds ratio 3)

# Conclusions from case studies

- ❖ Pilot studies; hypotheses generating; need evidence at scale
- ❖ Findings support other work by ILRI in informal markets
  - Generally high levels of unsafe food
  - Formal markets in poor countries often not safer than informal
  - Many risk-mitigating practices
  - Policy should be based on risk and not hazard
- ❖ Scope for improving capacity and incentives for risk assessment and management

# Where we are and ways forward

- ❖ Framing, generation, communication of knowledge and evidence
  - Creating (and sustaining) momentum in informal markets in India (dairy) and Vietnam (pork)
  - Conversion of momentum into results, using evidence from India (dairy) and Vietnam (pork)
  - Evidence at scale still needed, potentially through CRP-supported work in India and Vietnam
- ❖ Political economy of stakeholders, ideas and interests
  - Creating momentum through advocacy and strategic partnerships and actions that will deliver policy outcomes for effective risk management
- ❖ Capacity and financial resources
  - Using appropriate platforms, e.g., joint committee in India and food safety task force in Vietnam, for building capacity and creating (and sustaining) momentum for policy reforms

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	Issues and challenges in:	
	Creating and sustaining momentum	Conversion of momentum into results
Framing, generation and communication of knowledge and evidence	Where food safety is on the agenda, policy responses are often inappropriate so there is a need to provide evidence to challenge existing narratives, eg about formal=safe, informal=unsafe. <b>(completed studies in India, Vietnam)</b>	Evidence on effectiveness of capacity building interventions, in pilots and at scale. <b>(GET Dairy in India; Vietnam still to be assessed)</b>
Political economy of stakeholders, ideas and interests	Often high priority for economic and trade groups; priority for civil society highly variable <b>(Vietnam food safety policy and Livestock Development Strategy; situational analysis of pig sector Vietnam and dairy sector India)</b>	Coherence across scale of government could be important since local level implementation and adaptation of schemes will likely be necessary.
Capacity and financial resources	Risk-based approaches may be the policy, following international standards, but they may not be implemented due to lack of capacity, finances or political will. <b>(some initial efforts, e.g., JCMC in India, task force in Vietnam)</b>	Capacity building among traders can be basis for effective intervention; interventions not be completely financially self-sustaining <b>(India; Vietnam still to be assessed)</b>

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