Food safety in Vietnam's livestock sector

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Outline

- Burden of foodborne disease (FBD)
- Emerging evidences on FBD from ILRI research
  - Hazards are usually high but risks vary
  - Benefits of traditional food value chains are often high
  - Formal sector is sometimes but not always safer
  - Control & command regulation doesn't work well and may lead to low compliance
  - Solutions based on working with and legitimising the informal sector are effective and feasible
- Recommendations for Vietnam

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Growing concern about food safety

Heo "VietGap" nhiễm chất cấm gây khủng hoảng niềm tin người tiêu dùng

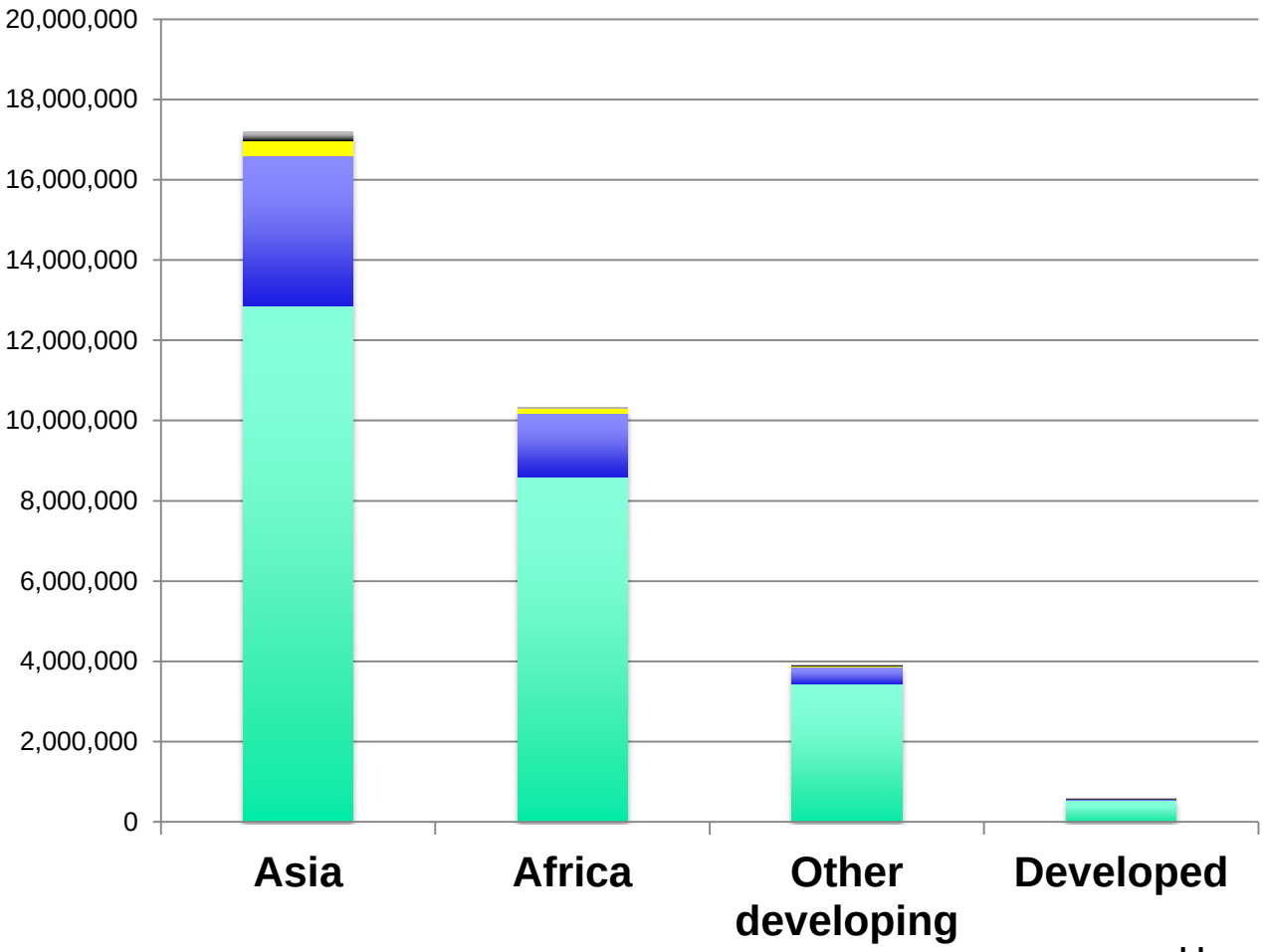
Tuần qua, Chi cục thú y TP.HCM sau khi kiểm tra bằng phương pháp test nhanh đã phát hiện 80 con heo bị nhiễm chất cấm Salbutamol do thương lái Nguyễn Văn Toàn nhập từ Đồng Nai về chuẩn bị giết mổ tại một công ty lớn tại TP.HCM. Điều đáng nói là toàn bộ số heo này có đầy đủ giấy tờ đạt tiêu chuẩn VietGap do Bộ Nông nghiệp và Phát triển Nông thôn (NN-PTNT) ban hành.

Nguoi tieu dung, 20.5.2016

- Many/most reported concern over food safety (**40-97%**)
- Willing to pay **5-10%** premium for food safety
- Buy **20-40%** less during animal health scares
- Younger, wealthier, town-residing, supermarket-shoppers willing to pay more for safety

FBD- a new priority – most from livestock

Millions DALYs lost per year (global)



31 hazards

- 600 mio illnesses
- 420,000 deaths
- 33 million DALYs

Other toxins

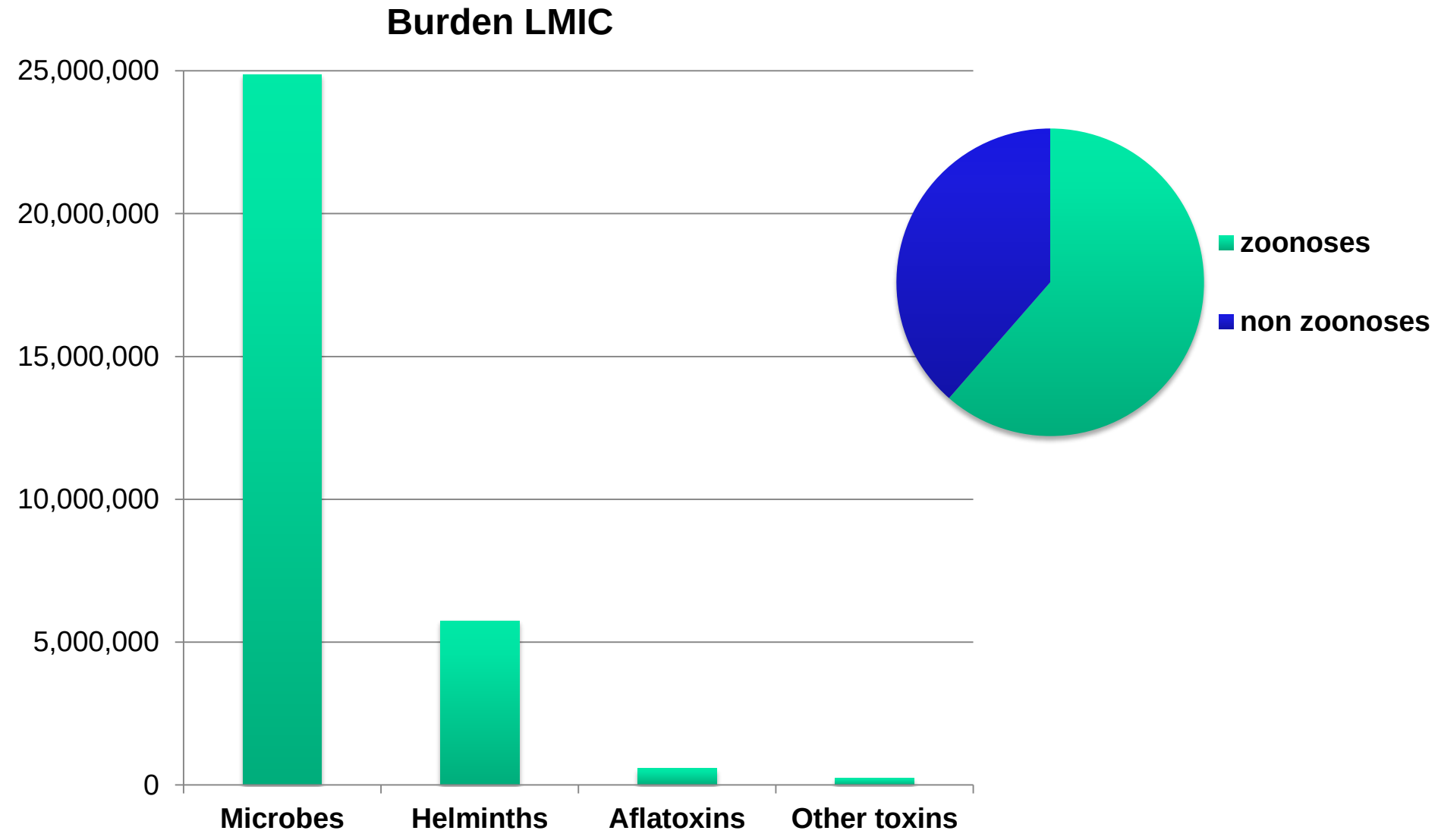
Aflatoxins

Helminths

Microbial

Havelaar et al., 2015

Causes of FBD



Havelaar et al., 2015

Informal markets have a major role in food security and food safety

Benefits of wet markets

Cheap,
Fresh,
Local breeds,
Accessible,
Small amounts
Sellers are trusted,
Credit may be provided

(results from PRAs with consumers in Safe Food, Fair Food project)

	Wet market milk	Supermarket milk
Most common price /litre	56 cents	One dollar
Infants consume daily	67%	65%
Boil milk	99%	79%

Survey in supermarkets and wet markets in Nairobi in 2014

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Informal markets provide food for the poor and livelihoods for poor men and women

Milk (cow) Production: men (x Nairobi) Processing: women Marketing: women (x Abidjan) Consumed: both	**Milk (goat)** Production: men (w milk) Processing: women Marketing: women Consumed: both
Beef/goat Production: men (w assist) Processing: men Marketing: men (butcher,pub) Consumed: both	**Poultry** Production: women Processing: women Marketing: women Consumed: both
Pigs Production: women Processing: men Marketing: men Consumed: both	**Fish, crabs** Fishing: men Processing: women Marketing: women Consumed: both

Hazards are high but risks vary

Fail standards: bacteria

- 100% milk in Assam, India
- 98% of raw meat in Ibadan, Nigeria
- 94% of pork in Nagaland, India
- 77% farmed fish in Egypt

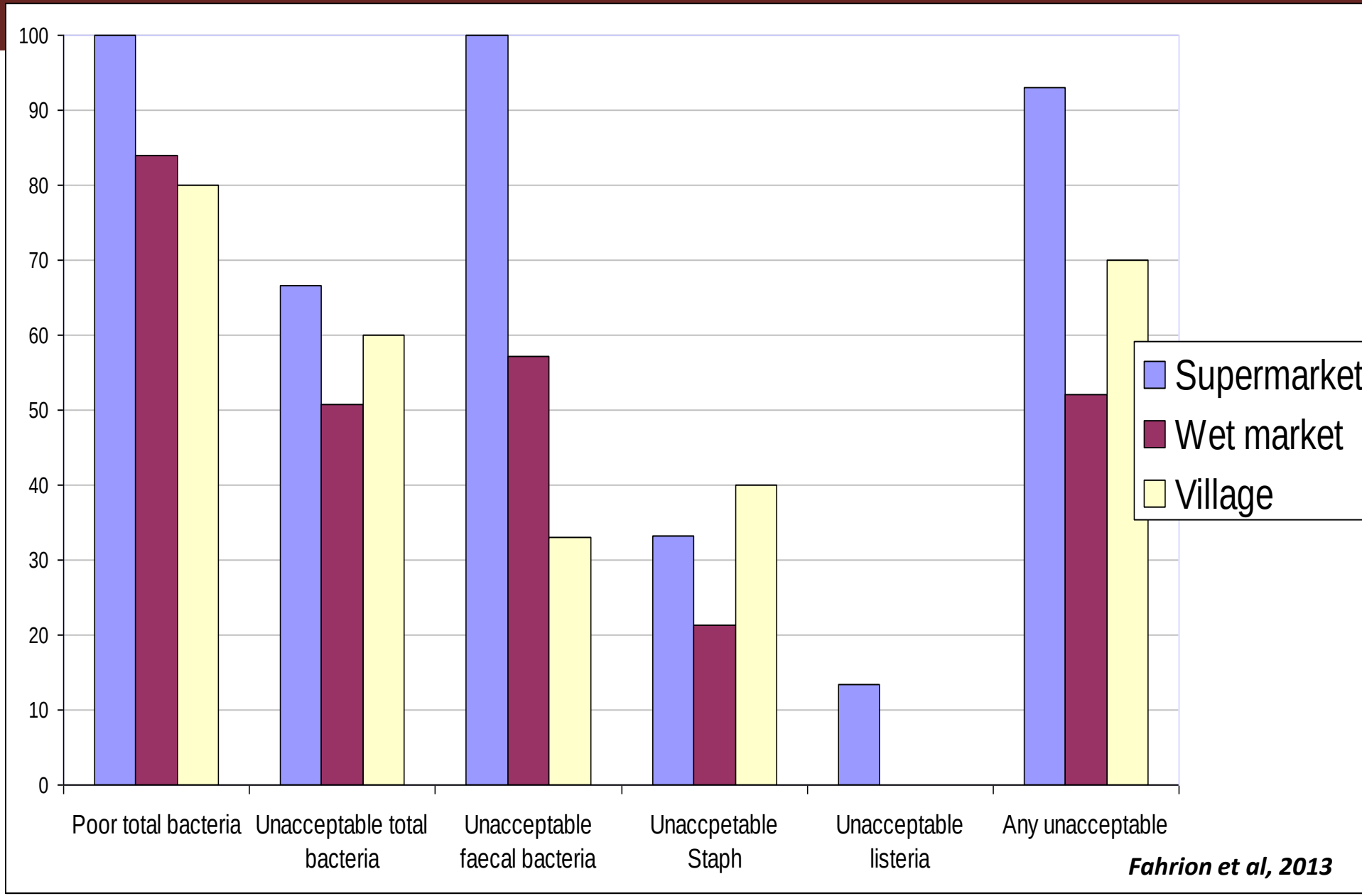
Fail standards: chemical

- 92% milk in Addis Ababa
- 46% milk in Kenya

Diarrhoea in last 2 weeks

- 0.02% consumers in Canada
- 0.02% raw milk buyers in Kenya
- 23% consumers in Nagaland
- 43% Nigerian butchers

Compliance : Formal often worse than informal

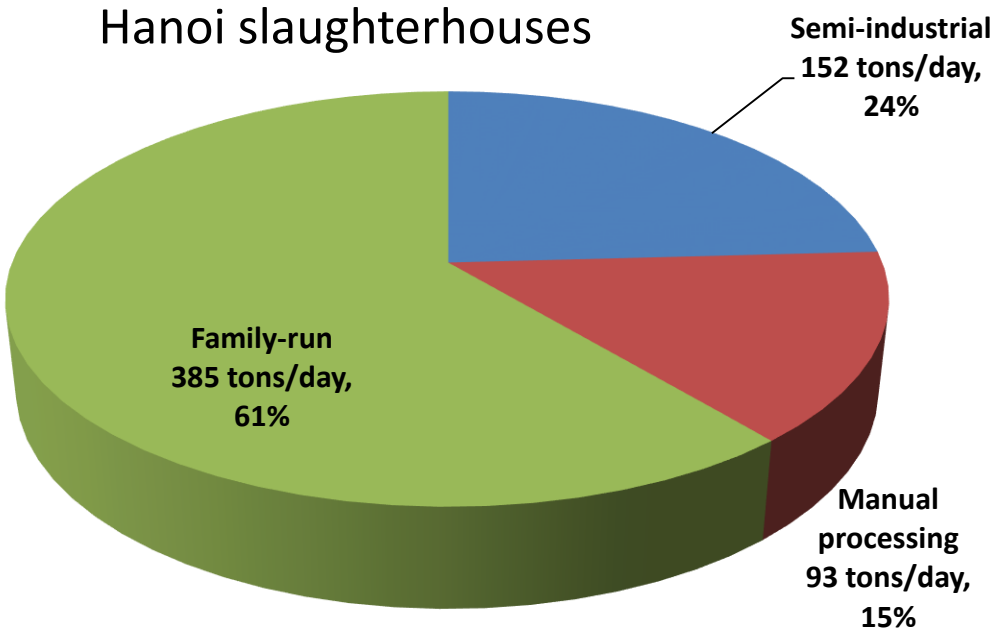


Fahrion et al, 2013

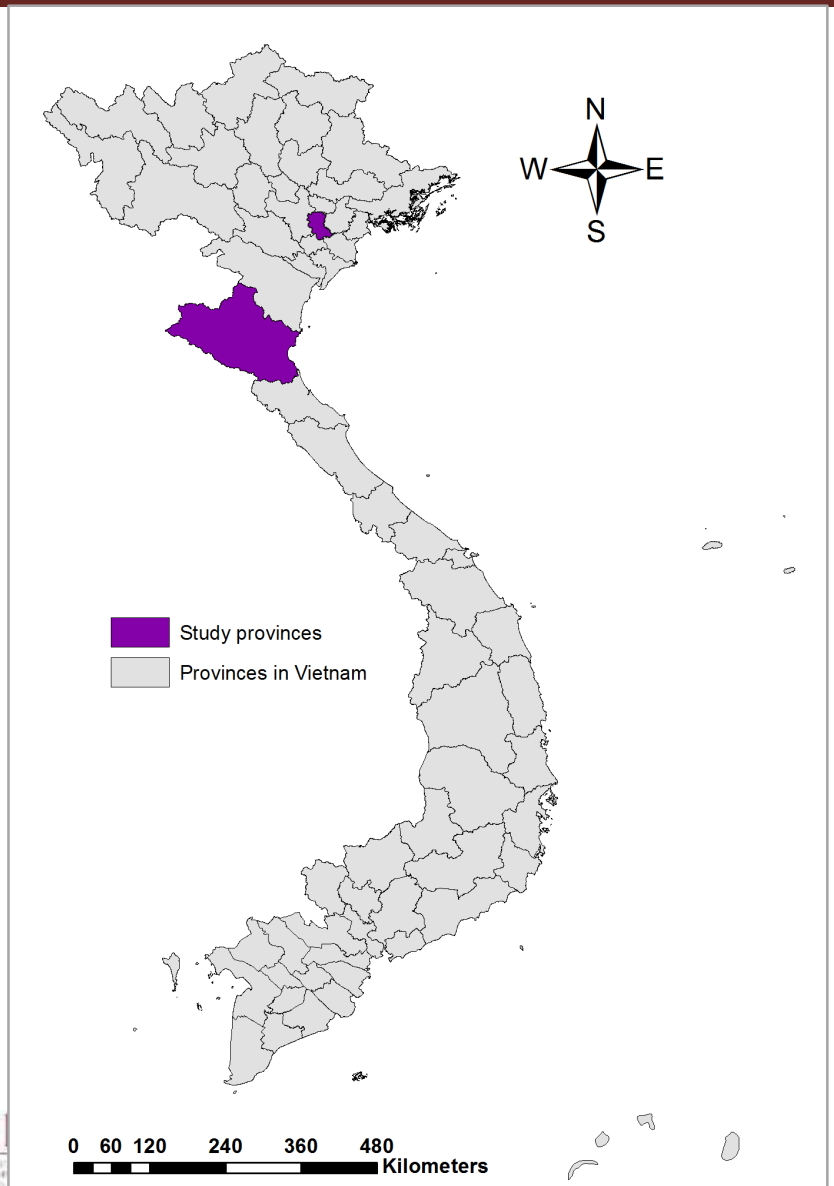
Formal vs traditional markets in Vietnam

Hanoi		Super-markets	Whole-sale markets	Retail markets	Total
	Quantity (tons/ day)	94.5	17.5	518	630
	Share of volume	15%	3%	82%	100%
	No of markets/ stores	103	4	426	

- 30,000 small slaughterhouses
- 11,000 wet markets
- 110,000 butchers (most women)
- Around 10,000 industrial pig farmers and 4 million small-scale pig farms



PigRISK project (2012-2017)



*To **assess impacts of pork-borne diseases on human health and the livestock** sector and identify control points for risk management.*

Focus on risk based approaches

Qualitative/quantitative risk assessments

Multi- disciplinary team

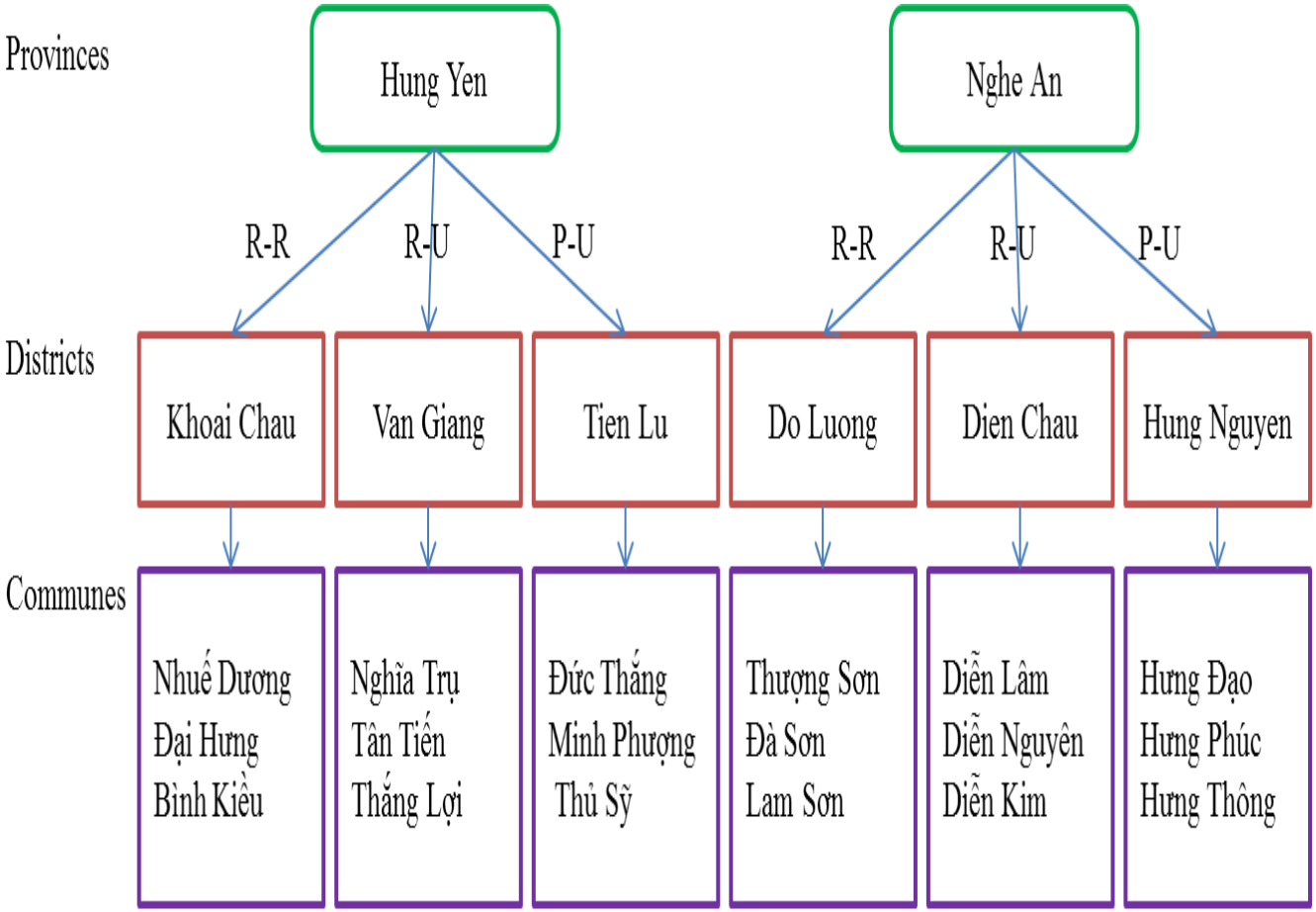
Vets, PH, Economist, Environment

Data collected

Input suppliers, Producer, slaughterhouse, Trader, Market, Consumers

Biological sampling, questionnaires, participatory epidemiological tools

Study sites – PigRisk



R: Rural

P: Peri – urban

U: Urban

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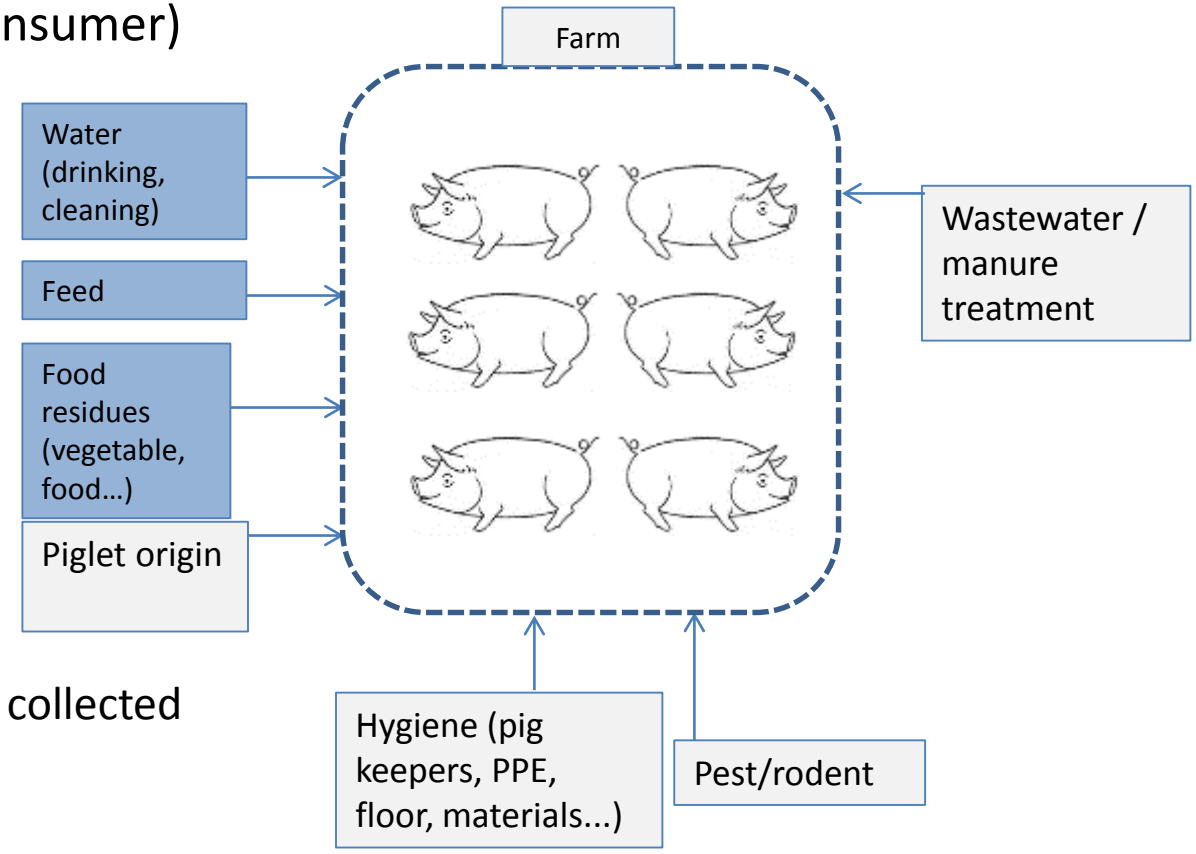
PigRisk: Food safety

Risk assessment

- *Salmonella* risk pathways developed for producers, slaughterhouse and consumers
- Quantitative RA (risk for consumer)



1275 samples (farms, SH, market) collected during 1 year

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PigRIsk - Results on microbial analysis

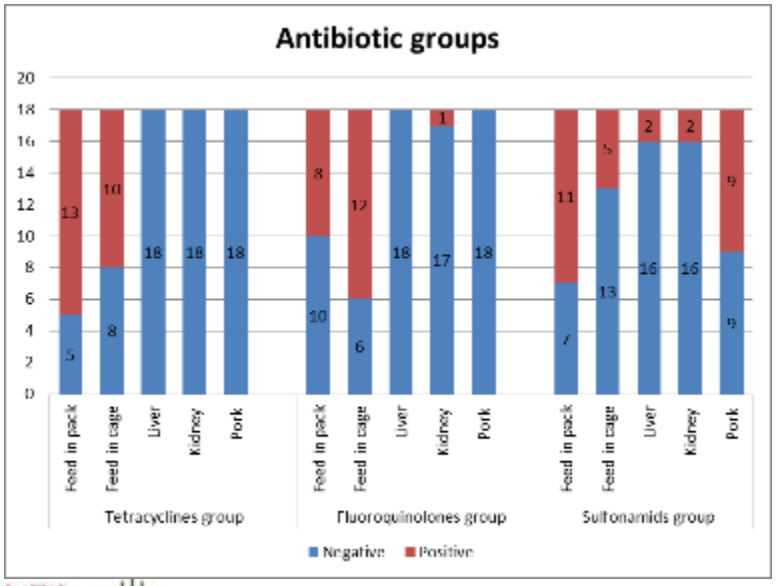
Actor	Sample type	Pos/Total	Prev (%)
Producer	Drink-FA	14/72	19.4
Producer	FloSwab-FA	26/72	36.1
Producer	WasteW-FA	28/72	38.9
Slaughter house	CarcassSwab	58/149	38.9
Slaughter house	Feces	50/149	33.6
Slaughter house	Mesenteric LN	53/149	35.6
Slaughter house	SwabFlo-SH	11/49	22.4
Slaughter house	Water-SH	10/49	20.4
Market	Pork	97/217	44.7
Market	Pork-Gr	33/80	41.3
Market	CutSwab	55/217	25.3
Market	Overall	435/1275	34.1

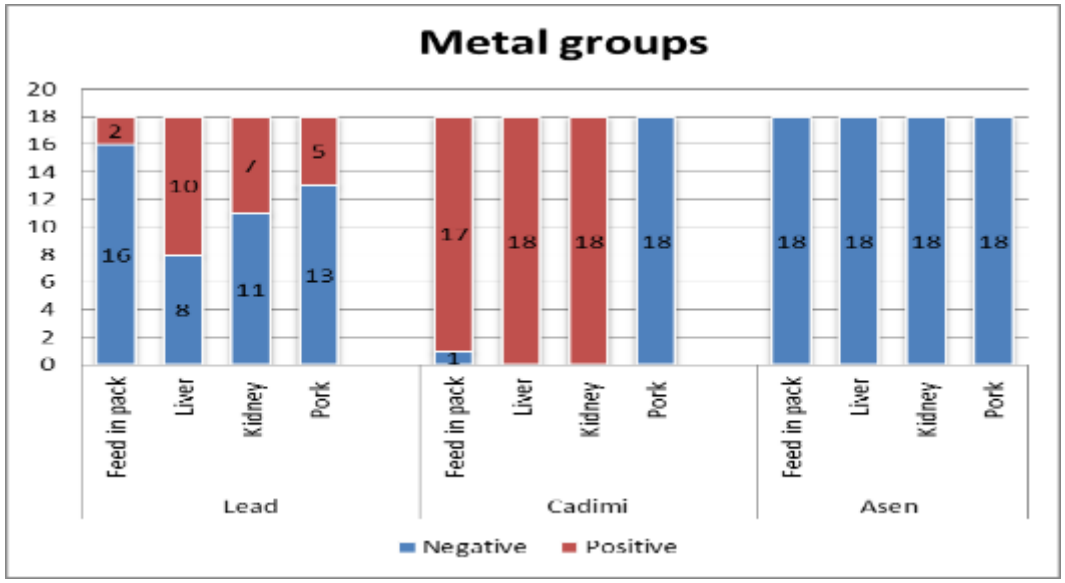
Selected key results: Chemical hazards

514 pig feed, kidney, liver and pork samples were pooled into 18 samples were analysed for antibiotic residues, β-agonists, and heavy metals, compared with current regulations.

Presence of banned substances (e.g. chloramphenicol and the growth promoter salbutamol in pig feed and sold pork)

Most of samples: negative or did not exceed current MRL





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Tuyet Hanh et al, 2016 (submitted)

Selected key results: Food safety

Streptococcus suis in slaughter pigs (N=147):

S*. suis* type 2, low prevalence (1.4%)

Potential risk behaviors such as consumption of "Tiet canh"

– a raw pig blood dish was common in slaughterhouse workers (43.1%)

Cross-contamination survey (*Salmonella*) (N=153)

Among various simulation scenarios, using the same cutting board induced the highest risk of cross-contamination with *Salmonella* (66.7%), followed by the same knife (11.1%) respectively

Health risk by QMRA: The annual incidence rate of salmonellosis was estimated to be 12.6% (90% CI: 0.5 – 42.6). The factors most influencing the estimate were household pork handling practice followed by prevalence in pork sold in the central market.

Dang Xuan Sinh et al, 2016 (submitted)

Improvements are feasible, effective, affordable

- Training & branding for butchers in Nigeria:
  - 20% more meat samples met standards
  - Cost $9 per butcher
  - Saved $780/per butcher per year from reduced cost of human illness
- Providing information on (rational drug use) to farmers
  - Knowledge increase x 4,
  - Practice improvement x 2,
  - Disease decrease by 1/2

Training & certifying milk vendors

- Branding & certification of milk vendors in Kenya & Guwahti, Assam led to improved milk safety.
- It benefited the national economy by $33 million per year in Kenyan and $6 million in Assam
- 70% of traders in Assam and 24% in Kenya are currently registered
- 6 million consumers in Kenya and 1.5 million in Assam are benefiting from safer milk

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Efforts in managing food safety in informal markets must be pro-poor

- The poor are more prone to food-borne disease but cannot afford to fall ill
- Risk management needs training, skills development and prerequisites
- Linking formal and informal markets can decrease poverty
- Impact assessment on economic losses and gains of food safety risks is needed

Recommendations for Vietnam

- Balance between formal and “wet/traditional” markets
- Training informal value chain actors: training farmers on input use and good practices (GAP), training & certifying food vendors, incentive based interventions
- Demand side: increased awareness of consumers
- New technologies
- Needs of evidences on health impacts of food safety

Recommendations for Vietnam

- Risk communication needs to focus on banned chemicals, while informing the public about the minimal risks associated with heavy metals (situation is not that severe)
- Food system governance: improved food safety institutional framework, regulations, application of risk-based management

http://infonet.vn/bo-truong-cao-duc-phat-da-so-thuc-pham-an-toan-nhung-dan-khong-biet-post195062.info

http://vtv.vn/xa-hoi/bo-truong-y-te-lam-ro-thong-tin-nhap-65-tan-chat-cam-trong-chan-nuoi-20151104070141659.htm

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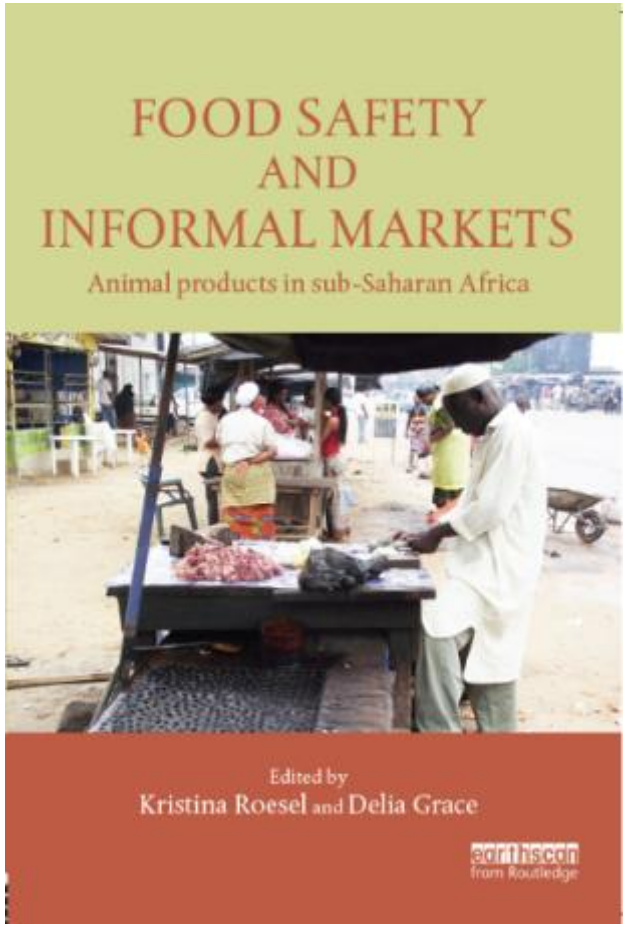

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Animal scientist, Nobel Prize Laureate for Physiology or Medicine–1996

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