Food safety along informal pork market chains in Vietnam – successes and challenges from an integrative research team view

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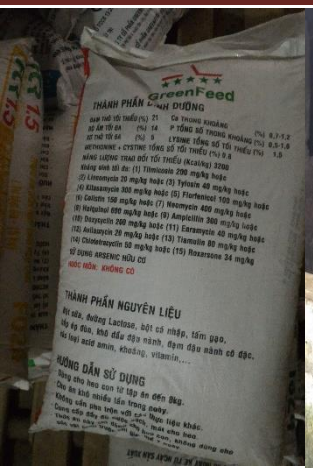




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Outline

Food safety and role of pork in Vietnam

PigRISK – approach, key results and challenges

Integrated research team

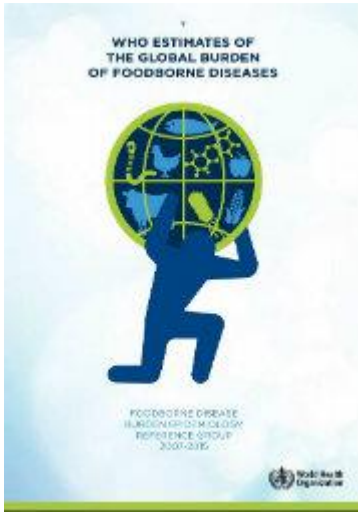
Conclusion & way forward

Why food safety

WHO's report: First global estimates of foodborne diseases

- **almost 1 in 10 people fall ill every year from eating contaminated food** and 420 000 die as a result
- With 33 million DALYs FBD are of a similar burden in order of magnitude as the "big three" infectious diseases HIV/AIDS, malaria and tuberculosis
- Children under 5 years of age are at particularly high risk
- African and **South-East Asia Regions have the highest burden**

http://www.who.int/foodsafety/publications/foodborne disease/fergreport/en/



Food safety – Vietnam

- **Food safety** among the **most pressing issues for people** in Vietnam, more important than education or health care
- Repeated episodes of adulterated and unsafe food
  - Pesticides in vegetables, **mass fish intoxication**, antibiotics residues
  - While biological hazards are the most important **risk perception towards chemical** hazards
- Reported outbreaks 370 (2014-2015), 66 fatalities, very high underreporting expected (>1/100)
- Vietnam has a **modern food safety legislation system**
  - Food exports relatively well managed but deficits in domestic markets
- Use of **risk based approach** and risk communication **limited**

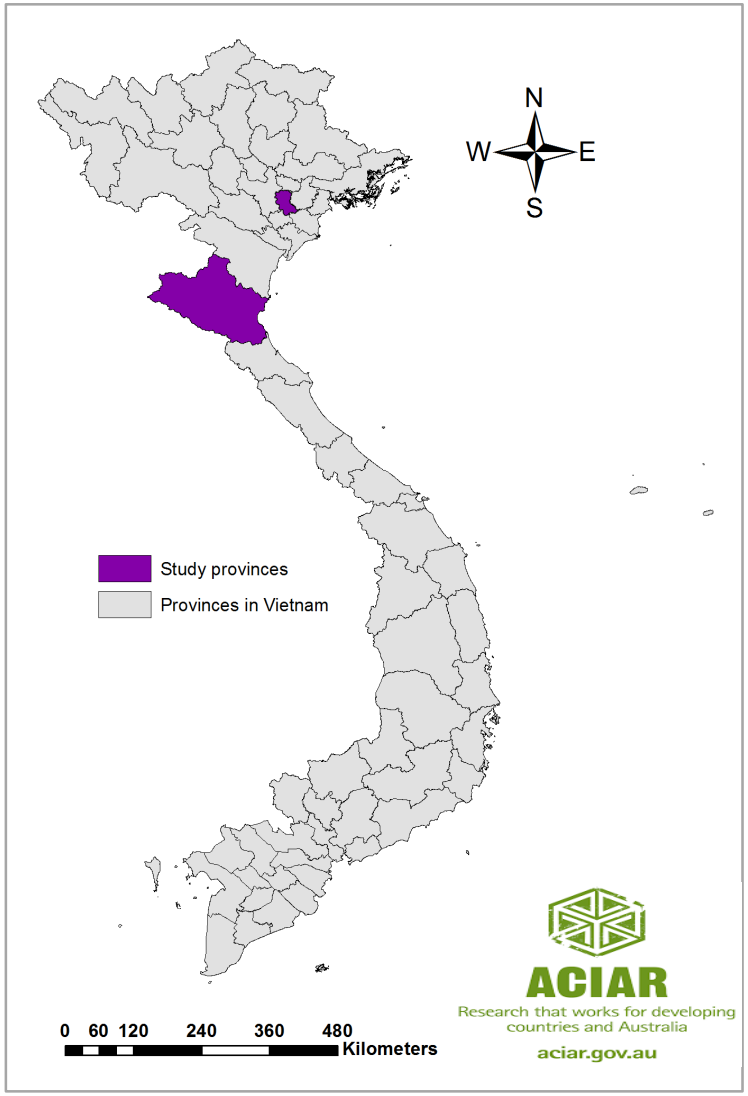
Background - pork in Vietnam

Pork is an **important component** of the Vietnamese diet

- More than 70% of consumed meat is pork
- Annual pork consumption per capita in Vietnam: 27kg
- 83% comes from very small or small farms
- 76% of pigs are processed in small slaughtering, nearly 30,000
- Preference for fresh "warm" pork supplied in retail traditional markets (80% of all pork marketed)
  - affordable, address local demands
  - often escape effective control

- Consumption of risky pork products is common (raw fermented/blood pudding)

Food safety risk assessment along the pork value chain



PigRISK project (2012-2017)

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

Integrated approach

- Interdisciplinary team

Vets, PH, Economist, Animal Science, Modeller

Study sites

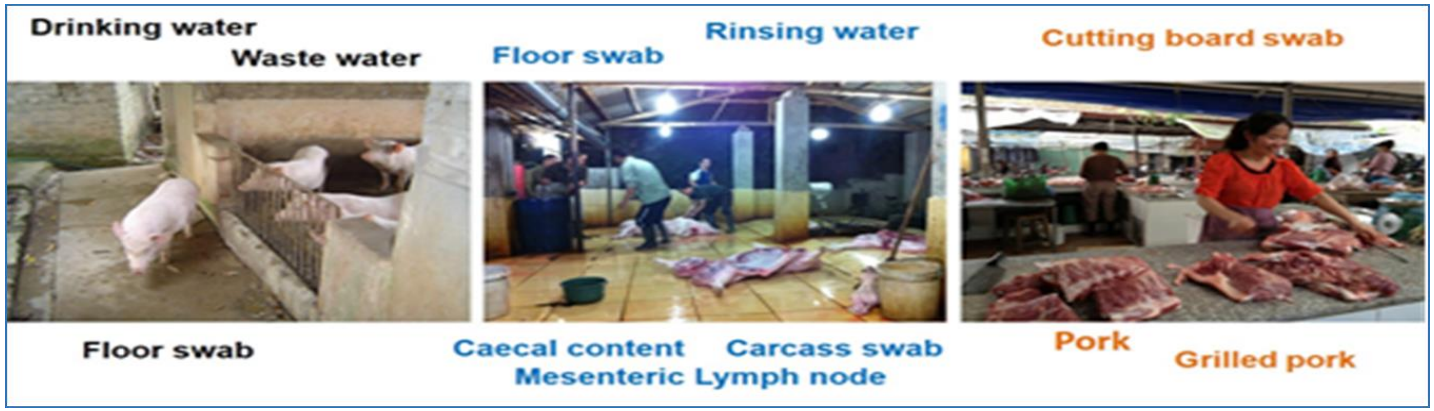
2 provinces

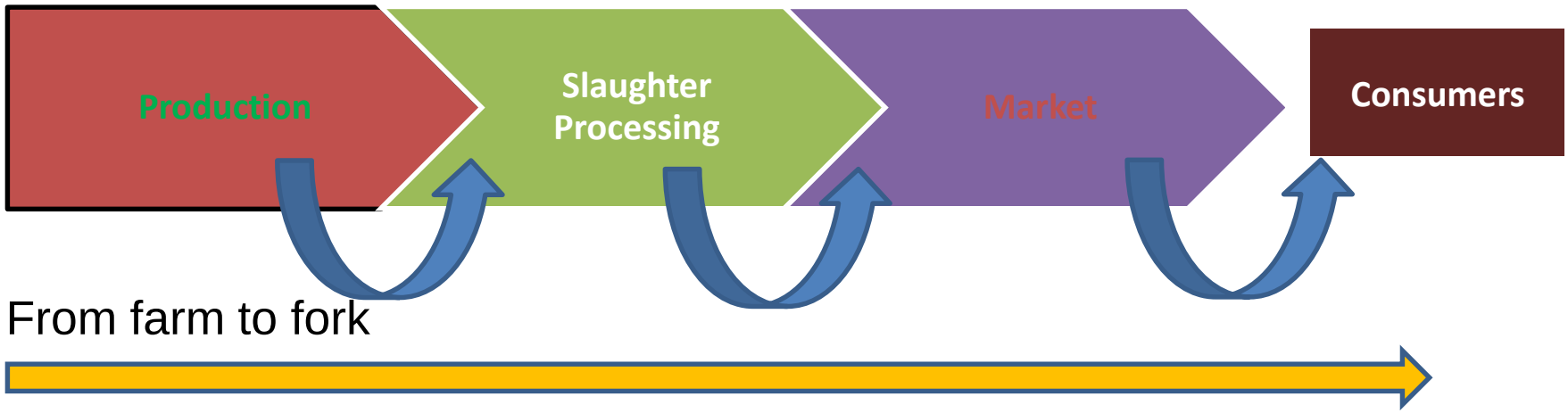
Hung Yen, peri-urban

Nghe An, rural

Pig Risk - VC approach

Placed at specific actor along VC based on RA results

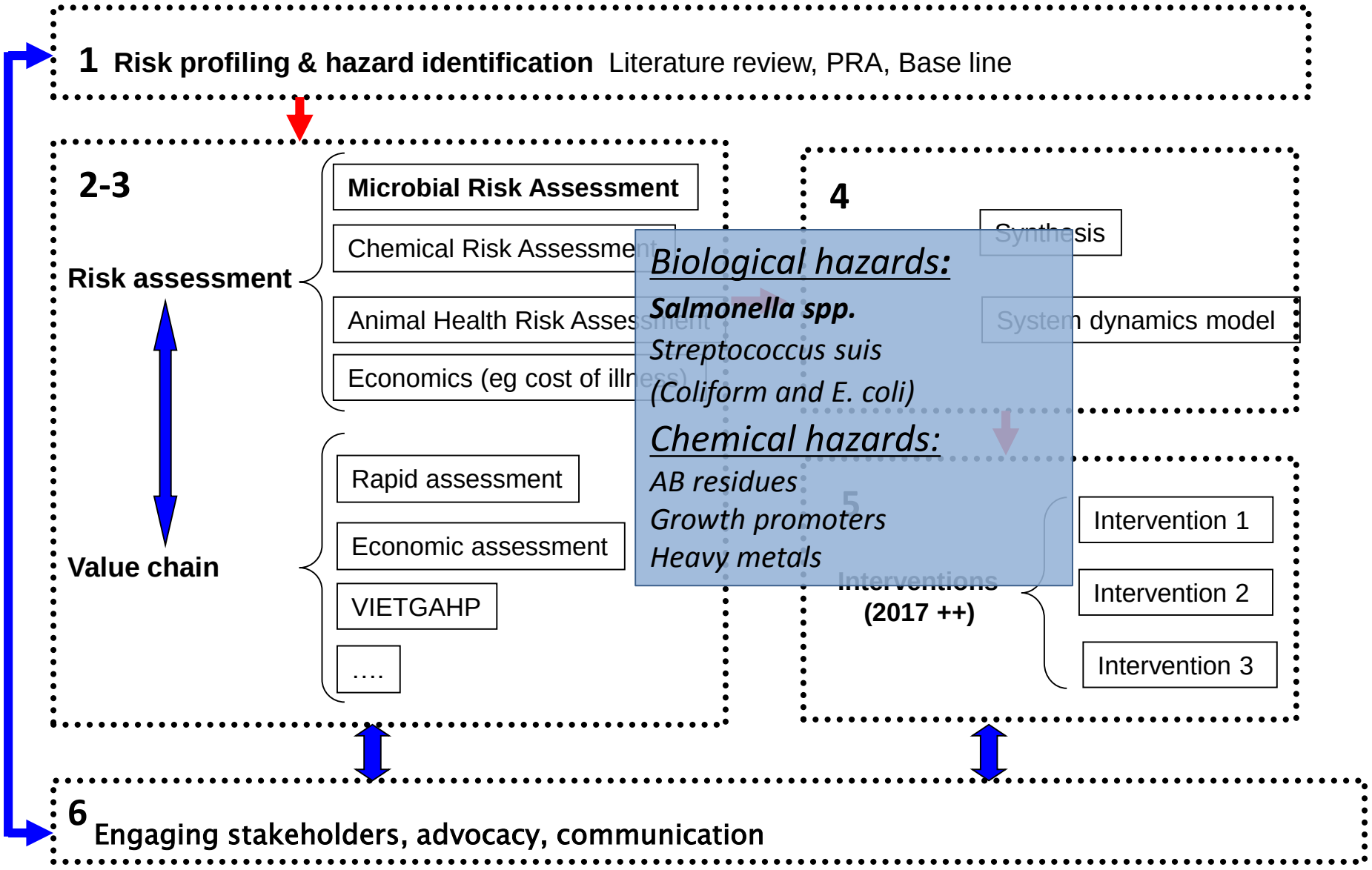




Systems context – actions taken by one affect all.

"Weak links" in the chain may accentuate disease risk – **challenge & opportunity**

Framework



<modified after Sinh et. al. 2016

PigRISK Selected results

- **Biological hazards** (Salmonella) are present in the pork value chain and increase along the chain: 44% in cut pork at retail market
  - Highest amplification at slaughterhouse but exposure starts at farm (20% Salmonella in drinking water for pigs)
  - Low priority given to food safety by producers (highest: feed and pig prices)
- **Risk** for consumer **determined**
  - First quantitative risk assessment for Salmonella in pork for Vietnam
  - Around one out of 10 consumers are infected by pork-related salmonellosis annually
- **First cost of illness** estimate for pork borne diseases
  - Hospitalisation alone was around $6 million per year
- Assessment of **chemical hazards** in pork
  - **contrary to public opinion**, chemicals studied **responsible for little health risk**, but banned substances were present in a few samples.

Intervention development - PIG SLAUGHTER-HOUSE

Pilot trial: Significant reduction of cofiforms

Source: Unger, 2015

PIG SLAUGHTER-HOUSE – challenges observed
Behavior/practice change

Source: Unger, 2016

Challenge: Missing incentive for safer pork at retailer

PigRISK Integrated research team

Multi-disciplinary research team established and functioning

What makes it work?

- *Involvement of research* teams already as early as in the concept note phase
- Strong recognised expertise, **clear tasks, contributions, outputs** identified and maintained
  - VNUA Econ team: Value chain, economic assessment and system dynamics model
  - VNUA Vet team: Animal health risks
  - HUPH: Public health and biological risk assessment

Integrated research team
What makes it work? cont.

Incentives/gains for the teams

- Capacity building, > 10 training courses tailored to team needs
  - VC analysis, system dynamics, risk assessment, >60 students
- Gained recognition which led to new assigments
  - VNUA team was contacted by other institutions to conduct “value chain” courses
  - HUPH team involved in establishment of National Taskforce on Food Safety and WorldBank Food Safety Assessment (2016)
- Track record on publications & scientific recognition
  - Joint papers but also room for individual papers
  - >10 peer revieived international & > 20 national
- New proposals developed with high chance of acceptance

Integrated research team, cont.

Challenges:

- Turnover of members was high (mainly due to pursuit of higher studies), leading to delays in some activities
  - also a positive outcome, because project members obtained new opportunities
- Cross cutting analyses of results, time consuming, resulted in considerable delay of analyses but also publications

Conclusions

- Various challenges related food safety
  - Biological hazards (Salmonella) in pork pose a considerable risk for the consumer
  - Situation for chemical hazards less dramatic while public perception focuses on those
- Strong links to policy makers established
- Inter-disciplinary team successfully established and sustainable
  - Success based on clear tasks, outputs and incentives
- PigRISK focused on assessment with many “first” but less progress was made on risk management
  - Will receive specific attention in a currently developed new project
  - Several pork value chains (e.g. native pigs, caterers providing pork to industrial zones, private boutique outlets selling ”organic” pork …)
  - Incentive based light touched interventions

Acknowledgment

- Vietnam National University of Agriculture
- Hanoi University of Public Health
- Local authorities in Hung Yen and Nghe An
- Involved various VC acotrs and groups

Publications in 2016

- Int Jnl PH
  - QMRA
  - Risk communication (chemical versus biological)
- Int Jnl for Food Prot
  - Perception on food borne disease

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